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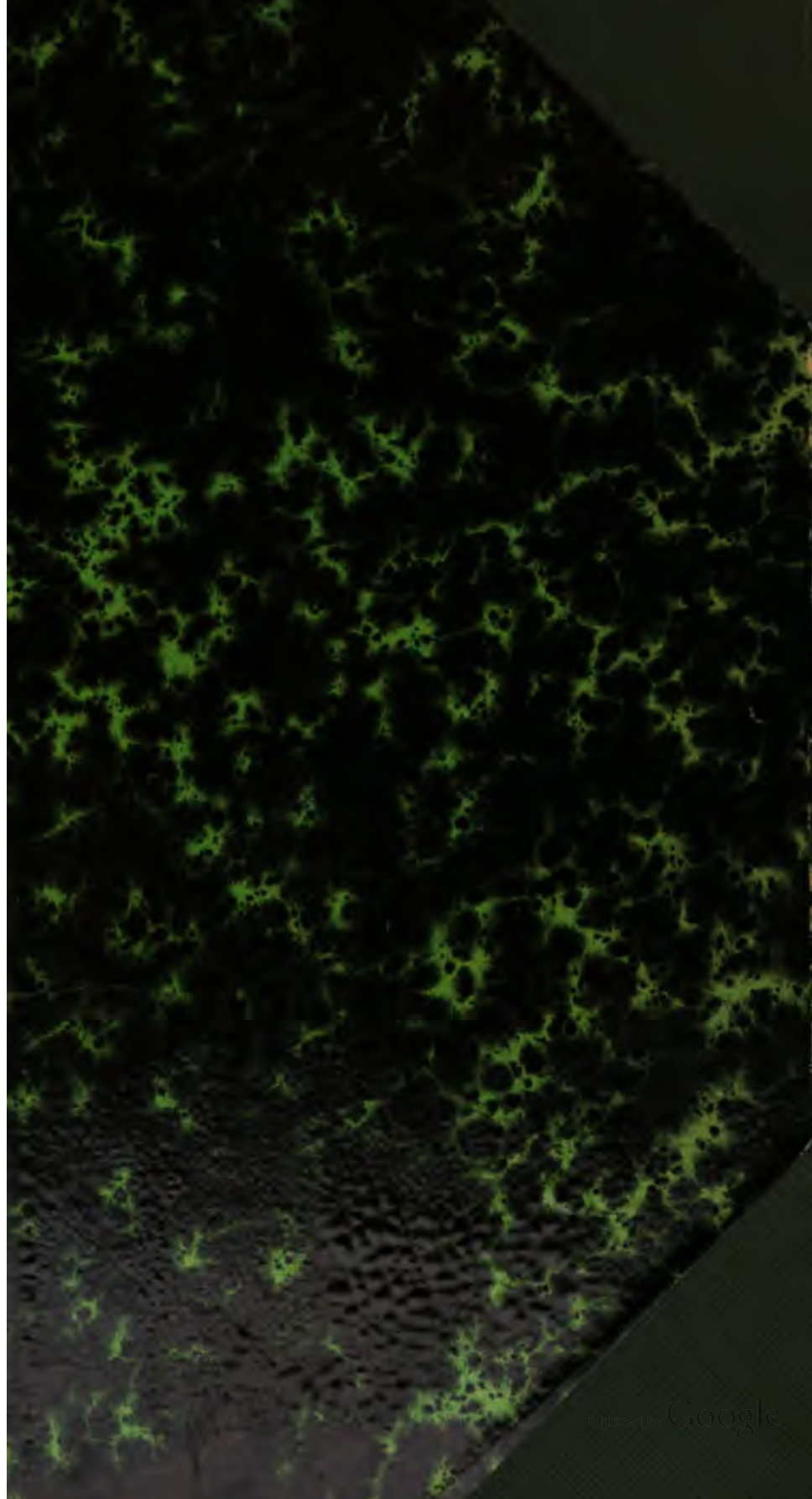
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HARVARD UNIVERSITY.



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AUG 18 1927

PUBLICATIONS
OF
**FIELD MUSEUM OF NATURAL
HISTORY**

REPORT SERIES

VOLUME V



CHICAGO, U. S. A.

1915 - 1920
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13516
FIELD MUSEUM OF NATURAL HISTORY.

PUBLICATION 186.

REPORT SERIES.

VOL. V, No. 1.

ANNUAL REPORT OF THE DIRECTOR

TO THE

BOARD OF TRUSTEES

FOR THE YEAR 1915.



CHICAGO, U. S. A.

January, 1916.

SF 1215

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PUBLICATION 186.

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CHICAGO, U. S. A.

January, 1916.

CONTENTS

	Page
Board of Trustees	2
Officers and Committees	3
Staff of the Museum	4
Report of the Director	5
Maintenance	7
Publications	8
Mailing List	8
Library	9
Cataloguing, Inventorying, and Labeling	10
Accessions	12
Expeditions and Field Work	19
Installation and Permanent Improvement	20
The N. W. Harris Public School Extension	29
Photography and Illustration	31
Printing	31
Attendance	31
Financial Statement	34
Attendance and Receipts	36
Accessions	37
Department of Anthropology	37
Department of Botany	38
Department of Geology	41
Department of Zoölogy	43
Section of Photography	46
The Library	46
Articles of Incorporation	61
Amended By-Laws	63
List of Honorary Members and Patrons	69
List of Corporate Members	70
List of Life Members	72
List of Annual Members	73

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ASSISTANT RECORDER.

BENJ. BRIDGE

THE LIBRARY.

ELSIE LIPPINCOTT, *Librarian*.EMILY M. WILCOXSON, *Assistant Librarian*

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION.

S. C. SIMMS, *Curator*.

January 1, 1916.

ANNUAL REPORT OF THE DIRECTOR.

1915

To the Trustees of Field Museum of Natural History:

I have the honor to present a report of the operations of the Museum for the year ending December 31, 1915.

Pursuing the announced policy of the Museum, its efforts during the year have continued to concentrate upon the preparation for exhibition in the new Museum building of such material as had been previously acquired. This material is of a character that when properly installed will fit into the general exhibition scheme which has been based fully as much upon material in storage as material in cases. Therefore the progress that has marked the period of this report has been largely due to the labors of the preparators, the taxidermists and the skilled workmen, and no particular effort has been made to acquire new material either by expedition or purchase. Later it is expected that some elimination of early work and imperfect material will take place.

The contract between the South Park Commissioners and the Museum corporation, granting a site for the new building near and south of Twelfth street extended in an easterly direction, was consummated on January 27th. The work upon the new Museum building, actually commenced on July 26th, has progressed with such vigor that the date on which the edifice will be ready for occupation has been considerably advanced. The impetus given to the building operations has had its influence during the past four months upon the scientific staff, and plans for installation, the system of transfer, the arrangements of the halls, offices, laboratories, work rooms, shops, etc., have received much attention on the part of the curators and their assistants. It is not considered necessary, if pertinent, to discuss the progress of the new building in these reports, in as much as the entire work and its responsibilities rests upon and within the Building Committee, but, as items of history in the development of the Museum as a whole, simple record of the work is considered permissible. The Board of Trustees has granted the request of the Chicago Geographic Society for permanent quarters in the new Museum building.

The report of the expert from Graham, Burnham & Company, who examined the present Museum building, indicates that the physical

condition of the structure is safe and stable. A thorough examination of the present building was also made by expert inspectors to examine the fire conditions and the protection and equipment for the prevention and extinguishing of fires, who report that a high degree of precaution is exercised insofar as fire hazard in the building was concerned and that the protection was good and well maintained. Three minor defects in the system were noted and the recommendations to remedy these have been carried out.

A committee of citizens interested in the establishment of an aquarium addressed the Board of Trustees to ascertain to what extent the authorities of the Museum would support the movement and contribute scientific assistance or control of its management. The response of the Board was not only in favor of establishing the aquarium, especially if a location could be obtained in proximity to the new Museum building, but the Trustees declared their willingness and their desire to accept the scientific management of the proposed aquarium.

A review of the acquisitions of the Museum by gift and purchase during the past year will demonstrate the increasing wealth of the Institution. Among the gifts may be mentioned many from the exhibiting countries and individuals at the Panama-Pacific International Exposition. The Museum acquired by purchase some striking and attractive material from the Chinese Government, which had been on exhibition at San Francisco. Other interesting material not costly but unusual and desirable was also purchased. Special mention should be made of the gift of Mr. Fritz von Frantzius, consisting of two Imperial Chinese Jade books and a collection of Japanese coins.

The resignation of Dr. George A. Dorsey, Curator of the Department of Anthropology, after twenty years service with the Institution, created a vacancy which was filled by the appointment of Dr. Berthold Laufer as Curator of the Department. Dr. Laufer was formerly the Associate Curator of Asiatic Ethnology and, during the year Dr. Dorsey was absent in the Orient, assumed the duties of Acting Curator. His extensive and varied experience in scientific research and investigation has specially qualified Dr. Laufer for the position to which he has been appointed. He has conducted expeditions into eastern Siberia for exploration of the ethnology of native tribes and to Tibet and China for culture-historical investigations and ethnological collections; was assistant curator of ethnology at the American Museum of Natural History; lecturer in anthropology and East-Asiatic languages at Columbia University, and is the author of many important books and papers relating to the ethnology, archaeology and philology of the East.

With funds contributed by Mr. Norman W. Harris an attractive and

instructive exhibit of the Harris Public School Extension cases was made at the Panama-Pacific International Exposition. The exhibit excited considerable interest and much favorable comment on the part of visitors at the Exposition and was the means of inaugurating serious consideration of the adoption of this system of education both in foreign countries and in other cities of the United States. The Japanese government asked for type cases for the information of the Imperial Department of Education. The exhibit was awarded a grand prize by the International Jury.

During the year Mr. Chauncey Keep became a Corporate Member of the Museum and was also elected a member of the Board of Trustees to fill a vacancy in the Board.

The following elections of honorary positions in connection with the Institution have been made during the past year. Mr. Fritz von Frantzius and Mr. Henry J. Patten were elected Life Members. Chiefly in recognition for their support and services in affairs of the site for the new building, Mr. Charles L. Hutchinson, Mr. Edward B. Butler, and Mr. Charles H. Markham were elected Patrons of the Museum. Mr. Albert M. Collins of Philadelphia and Mr. Lee Garnett Day of New York were elected Patrons of the Museum in view of the eminent services they have rendered to the Institution.

Mr. Norman B. Ream, who has been a member of the Board of Trustees from its organization, but who during recent years has resided in New York, died on February 9, 1915. The death of Dr. Daniel Giraud Elliot, which occurred on December 22nd, a prominent man in science, who resigned from the staff of the Museum after twelve years of service as Curator of the Department of Zoology, has to be recorded. Prof. Frederick Ward Putnam, formerly professor of American archaeology and ethnology at Harvard University and curator of the Peabody Museum, and a Patron of Field Museum of Natural History since January 31, 1898, died at Cambridge on August 14th. Mr. Robert F. Cummings, an Honorary Member of the Museum, who provided liberal funds for expeditions, for surveys and collections in the Philippine Islands and whose generosity has permitted the Museum to bring together a very extensive and attractive Philippine ethnology exhibit, died on December 31, 1914.

MAINTENANCE.—The budget approved by the Board of Trustees provided the sum of \$144,050 for the maintenance of the Museum for the fiscal year. The actual amount expended was \$124,185, leaving a balance within the anticipated expense for the year of approximately \$19,000. In addition to the cost of maintenance sums were expended for collections, new installation and expeditions that brought the total

8 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

to \$181,000. As will be observed from the details of the financial statement the sum of \$7,075, representing individual contributions, has also been disbursed for special collections and expeditions.

PUBLICATIONS.—Six publications were issued during the year, comprising parts of five volumes, details of which follow:

- Pub. 180.—Anthropological Series. Vol. XIV, No. 1. Traditions of the Tinguian. A Study in Philippine Folk-lore. By Fay-Cooper Cole. 126 pages. Edition 1500.
- Pub. 181.—Report Series, Vol. IV, No. 5. Annual Report of the Director to the Board of Trustees for the year 1914. 78 pages. 16 half-tones. Edition 2500.
- Pub. 182.—Ornithological Series, Vol. I, No. 8. Descriptions of New Birds from South America and Adjacent Islands. By Charles B. Cory. 10 pages. Edition 1500.
- Pub. 183.—Ornithological Series, Vol. I, No. 9. Notes on South American Birds, with Descriptions of New Subspecies. By Charles B. Cory. 33 pages. Edition 1500.
- Pub. 184.—Anthropological Series, Vol. XV, No. 1. The Diamond. A Study in Chinese and Hellenistic Folk-lore. By Berthold Laufer. 75 pages. Edition 1500.
- Pub. 185.—Zoölogical Series, Vol. X, No. 13. New Mammals from Brazil and Peru. By Wilfred H. Osgood. 12 pages. Edition 1500.

NAMES ON MAILING LIST

Domestic	523
Foreign	672
	<hr/>
	1,195

DISTRIBUTION OF FOREIGN EXCHANGES

Africa	20	Holland	20
Australia	37	India	18
Austria	32	Italy	36
Belgium	18	Japan	10
Borneo	1	Java	4
Bulgaria	1	Mexico	19
Canada	27	Norway	8
Central America	7	Portugal	5
China	1	Russia	16
Denmark	8	South America	29
France	54	Spain	7
Germany	134	Sweden	14
Great Britain	117	Switzerland	23
Greece	1	West Indies	45

DISTRIBUTION OF DOMESTIC EXCHANGES

Alabama	2	New Hampshire	4
Arkansas	1	New Jersey	11
California	24	New Mexico	3
Colorado	10	New York	68
Connecticut	18	North Carolina	6
Delaware	2	North Dakota	2
District of Columbia	39	Ohio	19
Florida	4	Oklahoma	3
Idaho	1	Oregon	1
Illinois	56	Pennsylvania	33
Indiana	15	Rhode Island	4
Iowa	15	South Carolina	2
Kansas	6	South Dakota	2
Kentucky	3	Tennessee	2
Louisiana	4	Texas	3
Maine	7	Utah	1
Maryland	8	Vermont	3
Massachusetts	54	Virginia	4
Michigan	11	Washington	6
Minnesota	8	West Virginia	5
Mississippi	2	Wisconsin	17
Missouri	12	Wyoming	2
Montana	2	Cuba	3
Nebraska	6	Hawaii	4
Nevada	2	Philippine Islands	3
		Porto Rico	1

THE LIBRARY.—The books and pamphlets accessioned during the year were 3,400, bringing the total number of books and pamphlets in the library to 68,275, which are distributed as follows:

General Library	44,221
Department of Anthropology	3,293
Department of Botany	6,946
Department of Geology	9,579
Department of Zoology	4,236

Notwithstanding the small number of serial publications received from foreign exchanging institutions, there is a slight increase over the books and pamphlets received during the previous year. Among the gifts of the year is the sumptuous edition of Japanese Temples and Treasures in three illustrated volumes presented by His Imperial Majesty's Commissioner General to the Panama-Pacific International Exposition. The edition is limited to two hundred copies and was especially prepared for the Exposition. Through the Minister of International Affairs, Wellington, New Zealand, a copy of the Illustrated Flora of New Zealand

was received. An almost complete set of its Transactions was presented by the South Australia Royal Society, Adelaide. The Société des Sciences Naturales, La Rochelle, France, presented a complete set to date of its Annales and the Archæological Survey of India eleven of its early Reports to assist in completing the Museum file. Other gifts that have been received are listed elsewhere. The late Dr. Seth E. Meek's ichthyological library, consisting largely of monographic papers and pamphlets, was purchased and from it 2,000 new titles were secured. These have been catalogued and bound. Other important acquisitions by purchase were: The Oxford English Dictionary; Audebert, *Histoire Naturelle des Singes et Makis*, 1800; Berthelot et Ruelle, *Collection des Anciens Alchimistes Grecs*; Hobson, *Chinese Pottery and Porcelain*; sets to date of the *Journal of Indian Art Ornithologische Monatsberichte* and *The Zoologische Annalen*.

The number of periodicals received was ninety-nine with twenty-two in subscription sets which have been previously entered. There were bound during the year 564 books, pamphlets and serial publications, and 19,275 cards were written and added to the catalogues. Twelve installments of the John Crerar Library cards have been received and added to its catalogue.

There was an increasing number of students and other visitors who found the library of service in seeking volumes not obtainable in other libraries in the city. A rearrangement of the book cases in the reading room was made during the year that rendered the books more accessible and improved its general appearance.

DEPARTMENTAL CATALOGUING, INVENTORYING, AND LABELING. — The work of cataloguing in the Department of Anthropology during the year is quite notable, 10,062 cards having been written. The cards are distributed over the divisions as follows: 975 North American, chiefly Hopi ethnology; 3,071 Melanesian ethnology; 5,027 New Guinea, collections by Umlauff, Voogdt and Dorsey; 932 Asiatic ethnology; and 57 classical archæology. These cards have been entered in the inventory books of the Department, which now number 38, and the total number of cards recorded beginning from the first volume is 139,516. During the year the Department was supplied with 2,664 printed labels, which have been distributed as follows: 720 Physical Anthropology; 1,250 Mrs. T. B. Blackstone Collection; 52 Models of Chinese Boats; 373 Joseph N. Field Collection; 12 Edward E. Ayer Philippine Guns; 249 Classical Archæology; and 8 objects in the Gem Room. From the section of Photography the Department has received 1,310 prints, which have been duly classified and added to the departmental albums, each print having received a typewritten description. Three albums re-

lating to New Guinea were prepared. A catalogue of lantern-slides was inaugurated by the Department, for which 1,537 cards have been written. The slides have been arranged in the succession of the numbers and placed in cardboard boxes with a label pasted in front, showing the range of the numbers, subject, and locality of the slides. By consulting the card-catalogue it is possible to locate any slide or to ascertain what slides relate to a particular subject, region, or tribe. To meet the demand of the public for information on specimens in the collections and as copies of many labels have been solicited by students, a permanent record of all labels written for the Department has been established. When printing labels intended for installation, copies are made, which are mounted on cardboard, and classified according to the cases in which the specimens are installed. These cards, 620 of which have thus far been prepared, are filed in proper order in cabinets showing identification labels on the outside. A card-catalogue of the exhibition cases, which have all been provided with numbers, has also been inaugurated.

All material received by the Department of Botany during the year has been fully catalogued and distributed, either into installation or classified and placed ready for installation. There were catalogued 19,831 sheets of specimens and 20,305 entries have been made, making the total number of entries 432,791.

Cataloguing of all specimens in the Department of Geology is complete, specimens received during the year being catalogued as received. Of the specimens catalogued 2,860 were palæontological specimens; 286 economic specimens; 102 mineralogical specimens and 118 miscellaneous, making a total of 3,366. Labels prepared numbered 660, of which 309 were printed and distributed. Among the collections which were labeled entire were those of the folklore of gems, Pleistocene fossils, coal tar products, and others of the economic series. Among these were several large, descriptive labels. To the Departmental photograph albums 63 prints have been added, making a total of 2,748 prints now in these albums.

In the Department of Zoology 1,793 entries in the primary catalogue for birds and mammals have been made. The systematic card catalogues have received more than usual revision and additions. The collection of mammals in alcohol, principally bats, has been provided with 617 new labels. 1,524 labels for shells have also been written, of which 1,253 were installed.

The following table shows the work performed on catalogues and the inventorying accomplished:

12 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

	No. of Record Books	Total No of entries to Dec. 31, 1915	Entries During 1915	Total No. of Cards Written
Department of Anthropology . . .	38	141,302	10,062	139,516
Department of Botany	57	432,791	20,305	65,750
Department of Geology	21	132,711	3,366	7,705
Department of Zoology	40	96,830	1,793	33,565
The Library	14	100,290	3,400	204,967
Section of Photography	17	113,303	24,76	.....

ACCESSIONS.— The number of accessions in the Department of Anthropology amounted to 31 during the year, of which 27 have been entered. The majority of these were received through the generosity of friends of the Institution. Mr. Edward E. Ayer presented several gifts of scientific importance. These include four brass guns (so-called *lantaka*) captured from the Moro on the Philippine Islands and presumably cast by Chinese in the eighteenth century; a collection of 161 chipped stone (mostly obsidian) projectile points from Upper Lake, Lake County, California, comprising a large variety of types; 19 miniature Pomo baskets from California, of striking technique and variety of form and weave; and an interesting collection of beads and perforated shells discovered in a grave with two skeletons, excavated at Lead-better Landing, Benton County, Tennessee. A group of 20 tear bottles from Egypt, found in Venice by Mr. Ayer during his travels, was purchased by the Museum. A Roman lamp, unearthed in Transylvania, Hungary, was received as a gift from Mr. William J. Chalmers. The East-Asiatic collections have been enriched by several important gifts. Prominent among these are a complete jade book and a jade seal, both being treasures from imperial possession, presented by Mr. Fritz von Frantzus. The jade book is unique inasmuch as it is complete with the original binding in yellow silk brocade and in perfect condition. It consists of ten rectangular slabs carved from exquisite Khotan nephrite (thirty pounds in weight), and is inscribed with a composition in Chinese and Manchu of the famous Emperor K'ang-hi in 1688; when he canonized his grandmother, the Empress Wen, and conferred upon her a posthumous title. The seal, 6¾ pounds in weight, a masterpiece of carving, as recorded by the inscription, was bestowed upon the Empress Jui on February 12, 1796, the day when she was officially appointed Empress of China. A description of these memorable objects has been published in the June number of the *Fine Arts Journal*. Mr. von Frantzus has likewise donated a very instructive collection of Japanese coins and paper money, numbering about 800 specimens, brought together by order of the Japanese Government, and a fine Chinese gold ring decorated with designs in relief. To Dr. Frank W. Gunsaulus the Museum is in-

debted for a very remarkable Chinese rosary of a hundred beads carved from exquisite dark-red Burmese amber, and in all probability manufactured in the imperial atelier. An interesting collection of Pompeian antiquities was purchased by the Museum. It represents a valuable addition to the Pompeian material and very well illustrates the agricultural phase and every-day life of the people in southern Italy toward the end of the first century. A Persian chain mail, acquired in Tiflis, was secured by purchase. The most important purchase of the year is represented by the models of Chinese pagodas and the wood-carved gateway made by the Orphan School of the celebrated Jesuit institution in Sikkawai near Shanghai and secured at the Panama-Pacific Exposition of San Francisco. The purchase of a small collection of incised pottery dug from shell-heaps in Walton County, Florida, is a welcome addition to the small quantity of material possessed by the Museum from this region. With funds provided by Mr. Homer E. Sargent, Mr. Cyrus H. McCormick and Mr. Martin A. Ryerson, a collection consisting of approximately one thousand objects, illustrating textiles, costume, jewelry, brass and bidri ware, religious images, and ivory carving, was secured by Dr. George A. Dorsey in India. This collection also includes an interesting series of miniature painting and notable old wood-carvings originating from a Jaina temple. Altogether it denotes a hopeful beginning in the direction of a collection representative of the high civilization of India and augurs well for the large opportunities offered in this immense field in which work on extensive lines may well be continued.

There were added to the Department of Botany during the year 19,831 sheets of herbarium specimens, comprising in part the following interesting and valuable series: Baker & Huber, Brazil 60; Botanical Garden, Natal 101; Botanical Garden, Sidney 99; Buchtien, Bolivia 200; Clokey, Illinois 145; Cowles, British Columbia 164; Alaska 468; Alberta 81, Saskatchewan 72, and Washington 491; Dusener, Illinois 292, Indiana 320; Elmer, Philippine Islands 865; Fendler, New Mexico 167; Gates, Philippine Islands 397; Gaumer, Yucatan 212; Heller, California 1044; Holm, Porto Rico 149; Johnson, Wisconsin 118; Lansing, Illinois 47, Indiana 128; Lindheimer, Texas 66; Meyer, Asia 47; Moodie, Alberta 195; Millspaugh, Wisconsin 84; Palmer, Mexico 381; Payson, Colorado 260; Philippine Bureau of Sciences 1367; Purpus, Mexico 227; Reynolds, Illinois 65, Wyoming 155, Yellowstone Park 75, Washington 151; Sherff, Illinois 214, Photographs of Bidens and Cosmos 671; Huron H. Smith, Oregon 53; Standley, New Mexico 176; U. S. Department of Agriculture, Gramineae 201; Wenzel, Philippine Islands 841; and Wright, New Mexico 182. In addition to the above, the organiza-

tion of the private herbaria purchased by the Museum was completed, and the specimens incorporated in the general herbarium. Of the 13,166 sheets so incorporated the following are notable: Baker, Colorado 534; Camp, Michigan and Ohio 549; Eggleston, Vermont 497; Fitzpatrick, Iowa 443; Graut, Vermont 388; Heller, California 998; Idaho 447; Pennsylvania 496; Sandwich Islands 938; Kearney, New Jersey and Tennessee 375; McDonald, Illinois 405; Mackenzie, Kansas and Missouri 308; Morris, Connecticut to Virginia 464; Nelson, Wyoming 442; Piper, Washington 268; Sandberg, Minnesota 248; Sheldon, Minnesota 204; Small, Virginia 224; Umbach, Illinois and Indiana 533; and Watson, Ohio 152. The private herbaria now incorporated with that of the Museum are the following:

Bebb, M. S., <i>Salix</i> and general	31,583
Heller, A. A., General	13,166
Hitchcock, A. S., Floridian	7,188
Millspaugh, C. F., <i>Euphorbia</i> and general	5,006
Patterson, H. N., General	37,887
Rothrock, J. T., General	22,901
Small, J. K., South U. S. and general	19,381
Schott, A., Yucatan and general	8,447
Schuette, J. H., Wisconsin and general	10,990
University of Chicago, General	44,104
Wahlstedt, J. H., <i>Epilobium</i> , <i>Viola</i> , <i>Chara</i> and general	17,555

The additions to the organized herbarium during the year, geographically arranged, are as follows: (The tabulation does not include regions from which no additions have been received this year).

LOCALITY	Added to Herbarium 1915	Total now in Herbarium
ALASKA	473	1,162
CANADA:		
Alberta	277	828
British Columbia	165	1,182
Manitoba	1	259
New Brunswick	4	181
Saskatchewan	73	439
UNITED STATES:		
Alabama	127	1,464
Arizona	74	9,522
California	1,151	35,091
Carolina, North	213	4,787
Carolina, South	7	1,042
Colorado	346	12,133
Connecticut	24	579
Dakota, North	4	564
Dakota, South	83	1,176

LOCALITY	Added to Herbarium 1915	Total now in Herbarium
UNITED STATES:		
Delaware	1	1,594
District of Columbia	150	2,523
Florida	19	20,735
Florida Keys, General	1	682
Big Pine Key	1	3
Coon Key	1	1
Georgia	4	4,566
Idaho	219	3,479
Illinois	1,109	22,161
Indiana	760	6,668
Indian Territory	25	312
Iowa	39	1,801
Kansas	45	551
Kentucky	4	972
Louisiana	53	1,349
Maryland	118	1,225
Massachusetts	220	3,404
Michigan	173	4,176
Minnesota	812	2,411
Mississippi	1	2,079
Missouri	360	3,380
Montana	22	4,030
Nebraska	6	420
Nevada	17	1,273
New Hampshire	56	1,542
New Jersey	56	3,011
New Mexico	630	3,591
New York	296	6,353
Ohio	250	2,080
Oklahoma	3	294
Oregon	69	7,503
Pennsylvania	653	11,514
Rocky Mountains (General)	4	1,399
Tennessee	105	1,562
Texas	93	9,857
Utah	3	2,535
Vermont	1,014	3,689
Virginia	594	5,297
Washington	314	7,756
San Juan Island	151	151
Brown Island	1	11
West Virginia	7	2,010
Wisconsin	237	4,900
Wyoming	622	1,552
Yellowstone Park	75	528
CENTRAL AMERICA:		
Costa Rica	5	616
Guatemala	5	2,891

16 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

LOCALITY	Added to Herbarium 1915	Total now in Herbarium
CENTRAL AMERICA:		
Mexico	864	36,602
Lower California	18	1,682
Yucatan	212	4,903
PANAMA:		
Canal Zone	12	65
Taboga Island	1	1
San Salvador	1	25
WEST INDIES:		
Bahamas:		
New Providence	1	2,423
Barbados	3	340
Cuba	5	9,783
Isle of Pines	2	655
Guadeloupe	1	1,035
Hayti	4	309
Jamaica	12	7,400
Martinique	1	617
Porto Rico	167	4,753
San Jan, Little	1	8
Santo Domingo	2	1,381
Santa Lucia	1	2
Sombrero Island	1	1
SOUTH AMERICA:		
Bolivia	201	3,917
Brazil	60	573
Tobago	2	572
Trinidad	7	489
Venezuela	3	1,067
EUROPE:		
Austro-Hungary	316	7,383
England	1	682
ASIA:		
Borneo	2	10
China	46	370
Philippine Islands	3,467	9,909
Siberia	1	431
AFRICA:		
South Africa	34	1,293
Basutoland	3	3
Natal	44	794
Zululand	15	175
OCEANIA:		
AUSTRALIA:		
New South Wales	85	611
Queensland	6	24
West Australia	7	141
Guam	1	2
Fiji Islands	1	2

LOCALITY	Added to Herbarium 1915	Total now in Herbarium
OCEANIA:		
Samoa	1	63
Sandwich Islands, general . . . . .	..	484
Mani	1	1
Kanai	449	449
Oahu	541	541
Horticultural	21	2,671
Illustrations mounted as Herbarium sheets	678	1,923

The most important accession in the Department of Geology was the gift of a large quantity of specimens of the fossil skeletons found in the asphalt beds of Los Angeles, California. This large collection was presented through the kindness of Mr. Edward E. Ayer, Mr. E. B. Butler, Mr. W. R. Linn, and Mr. Martin A. Ryerson. Among the important features of the collection was a complete mounted skeleton of the sabre-tooth tiger. This forms a striking and valuable addition to the series of fossils. An additional skeleton of this tiger, incomplete but mountable, was also included in the collection. An incomplete but mountable skeleton of the fossil wolf of the Los Angeles locality and in addition six good skulls and twelve lower jaws of the animal were also received. The large, extinct sloth found at this locality was represented by a skull nearly two feet in length, also by teeth and parts of lower jaws and some of the peculiar leg bones and claws of the animal. These will furnish a mounted limb. A large fossil lion of the locality, about twice as large as the largest African lion, is represented by several bones; a large camel, one-half larger than the largest modern camel, is represented by vertebrae and some other bones; and the native horse is represented by leg bones and teeth. There are also contained in the collection parts of four bird skulls, leg bones and claws, and probably one mountable foot. Some of these bones show birds of unusually large size. Bones of the mammoth and bison, the latter including one good bison skull, were also comprised in the collection. In addition a large quantity of miscellaneous bones of various species was included which will be valuable for purposes of comparison and possibly for completing skeletons. Two meteoric stones of the fall which occurred at Blanket, Texas, May 30, 1909, were presented through the kindness of Mr. Stanley Field and Mr. Arthur B. Jones. These stones represent all the known material of this fall and make a valuable addition to the meteorite collection. About 60 specimens of minerals and ores were presented by Mr. W. J. Chalmers. This series included a number of specimens of gold ores showing free gold, specimens of native silver, agate, turquoise and other valuable minerals. Fifteen specimens of jasper and moss agate, presented by Mr. J. H. Mosher of

Glendive, Montana, and several additional specimens of moss agate showing remarkable imitative landscape effects, loaned by him, furnish excellent specimens of a remarkable occurrence of this mineral. Mr. Fred Pattee contributed a number of specimens of ores and industrial minerals from various western localities. These gifts included ores of copper and vanadium, also specimens of phosphates, asbestos and barite. An interesting series of copper ores showing stages of replacement of hornblende by copper minerals was presented by Dr. F. C. Nicholas, also a valuable specimen of tungsten ore. A striking and valuable specimen of gold ore from the Smuggler-Union mine, Colorado, was presented by Mr. T. S. Chalmers. The India Geological Survey presented several specimens of Indian laterite, thus securing a representation of this peculiar mineral which had not hitherto been possessed. The representation of the Los Angeles fossil fauna was increased by the gift of 532 specimens by Dr. William Bebb. These specimens included several hundred bones of *Smilodon*, a large number of bones of the fossil wolf and some of the fossil horse, sloth and bison. The Colorado-Yule Marble Company presented six full-sized slabs showing the varieties of marble obtained at its quarries. The collection of fuller's earths and barites which had hitherto been quite incomplete, was increased by the gift of specimens from several firms producing these substances. Of these, fuller's earths were presented by the Manatee Fuller's Earth Corporation, the Floridin Company, J. E. and R. M. Farnsworth and the Lester Clay Company; and barite was presented by the Cherokee Chemical Company, Durex Chemical Works, Krebs Pigment and Chemical Company, and Thompson, Weinman and Company. Mr. H. R. Wood, the producer, presented four specimens of tungsten ore from Arizona, and C. K. Williams and Company three specimens of crude and ground talc. Nine specimens of iron ore from the unusual deposits that occur at Mayville, Wisconsin, were presented by Mr. E. S. O'Connor. Mr. Max Ziege presented 33 specimens of ores from the Ruby Mountain District, Nevada, which included copper, antimony and silver ores and accompanying rocks. Exchanges made with several individuals and institutions resulted in adding desirable material. The most important accession received in this way was obtained from the Deseret Museum, Salt Lake City, Utah, and consisted of fifteen specimens of the products of the Great Salt Lake, Utah, and fifteen brilliant and rare specimens of crystallized pyrite and tetrahedrite from Bingham, Utah. The Salt Lake products included brines, calcareous oölite, mirabilite and various forms of common salt, all obtained from the waters of the lake. A slab of the Big Skookum meteorite was obtained by partial exchange with

the Foote Mineral Company. From Mr. H. B. Derr were obtained 37 specimens of analyzed soils, besides limestones and clays from various localities in Missouri. From Mr. William Foshag were obtained by exchange eight specimens of rare California minerals, and from Mr. E. G. Norton three specimens of crystallized calaverite from Cripple Creek, Colorado. The principal accession by purchase was a number of specimens of the rare Carboniferous crinoid *Phalocrinus*, which had not previously been represented in the collections. Specimens of tracks of a Carboniferous batrachian were included in the same accession.

In the Department of Zoology the number of accessions during the year were as follows: Birds 143; mammals 16; fishes 276; insects 923; and shells 432. Of these, 125 of the birds were an important purchase of Dutch Guiana birds from Mr. Penard; 152 Nicaraguan butterflies were obtained from Senor Dion. Chaves of Managua; 24 species of sphinx moths were presented to the Museum by Mr. B. Preston Clark of Boston, these with one or two exceptions being new to the Museum collection and some of them very rare; also 116 Bolivian insects secured by the Collins and Day expedition to South America. There was obtained by purchase a very interesting abnormal form of *Heliconius doris viridis*. Of the 276 fishes added to the collection 265 were the gift of Dr. C. Eigenmann and were desirable acquisitions. Of the 432 shells received, 255 from southwestern United States were the gift of Mr. R. C. Orcutt; 52 specimens from the Museum's South American Expedition, and 117 from the Joseph N. Field South Sea Islands Expedition.

EXPEDITIONS AND FIELD WORK.—Dr. George A. Dorsey, to whom leave of absence had been granted for a visit to the Orient, availed himself of the opportunity of his sojourn in India to acquire an ethnological collection for the Museum with funds provided through the generosity of Mr. Homer E. Sargent, Mr. Cyrus H. McCormick and Mr. Martin A. Ryerson. A description of the collection appears elsewhere in this report.

The discontinuance of the regular zoological expedition to South America was compensated for by participation in an expedition known as the Collins-Day South American Expedition, organized and financed by Mr. Alfred M. Collins of Philadelphia and Mr. Lee Garnett Day of New York City. This expedition included besides Mr. Collins and Mr. Day and their associate, Mr. W. T. Walker, two zoological collectors, one, Mr. R. H. Becker, representing the Museum, and the other, Mr. G. K. Cherrie, representing the American Museum of Natural History of New York. The entire expenses and salaries of the collectors were generously defrayed by Mr. Collins and Mr. Day and every opportunity was afforded for work with the result that, despite a

rainy season and a limited amount of time, some 1,300 specimens of birds and mammals were secured. By special agreement these will be divided equally between the two Museums. The expedition sailed from New York December 26, 1914, and proceeded via Panama to Mollendo, Peru. From there a short trip was made to the highlands near Lake Titicaca and specimens were obtained of the larger mammals of the region, especially the guanaco or wild llama, and the vicuña. It is of great interest to note, as illustrating the scant means available for studying South American animals, that these vicuñas were the first to be brought to a North American Museum, notwithstanding the fact that the species is of relatively large size and of great economic importance. The expedition continued through the Andes to Cochabamba, Bolivia. From Cochabamba it was decided to descend to the Madeira River and the Amazon by way of the Chapare and Mamore rivers instead of by the more frequented route via the Beni River. The difficult journey was made with a train of twenty-four pack mules at considerable expense of time, money and personal hardship. The remainder of the trip was by canoe and small steamer to the Madeira-Mamore railroad by which the rapids of the Madeira were passed and thence to the Amazon at Manaus where steamships of good size were available. The collection of mammals secured by the expedition has not yet been studied and the specimens of birds, which will ultimately come to this Museum, have not been received. In September and October, Taxidermist Friesser made a successful expedition to the Olympic Mountains of the State of Washington, where, through the courtesy of state officials, he was permitted to obtain fine specimens of the Olympic or Roosevelt Elk. These and the accessory material secured at the same time will be used for a large group of these animals, which has long been planned and for which a striking background has already been painted.

The following is a list of the expeditions:

Locality	Collector	Material
British India.	Geo. A. Dorsey.	Ethnology.
Olympic Mountains.	J. Friesser.	Mammals.
Peru, Bolivia and N. Brazil.	R. H. Becker	Mammals and Birds.

INSTALLATION, REARRANGEMENT, AND PERMANENT IMPROVEMENT. — The work and efficiency of the Department of Anthropology in matters of installation have been fully maintained during the year. A total of 68 new cases have been placed on permanent exhibition, many of these being completely labeled. The material installed in these cases is distributed as follows: Classical archaeology 6 cases; Hopi ethnology 10 cases; Tibetan ethnology 18 cases; Chinese ethnology 8 cases; Chinese archæ-

ology 11 cases; Japanese ethnology 1 case; New Caledonian ethnology 8 cases; Philippine ethnology 1 case; and Solomon Islands ethnology 5 cases. The 31 cases on the gallery relating to physical anthropology were relabeled and reinstalled; work on the cataloguing of the main collections in physical anthropology has likewise been commenced. Hall 49 has been installed with exhibits of the Mrs. T. B. Blackstone Expedition to Tibet. One group of the displays illustrates the life of the nomadic tribes of eastern Tibet, their saddlery and other means of transportation, utilization of skins, leather, and yak-hair weavings. A large coracle, the only type of boat used in Tibet, is a notable feature in these exhibits. For comparative study, Chinese saddlery is likewise shown in this section on the dummy of a horse, which is equipped with full harness. Another group of Tibetan exhibits, consisting of 7 cases, illustrates the manufacture of textiles, the process of weaving being shown by several looms, as well as the style and wear of costume. Sixteen life-size figures have been prepared with much care for faithfulness of all characteristic features. They are completely dressed in native style, even as regards the hair and hair-dressing procured in Tibet, and are thoroughly representative of the manifold tribes of central, eastern, and northeastern Tibet. A model of a woman from central Tibet is shown in festive attire complete with all jewelry. Special emphasis is laid upon the difference between the pastoral and sedentary or agricultural tribes, and upon the influence exerted upon Tibetan culture by China. In addition to the costumed figures, nine articles of clothing are exhibited on dummies, also many specimens of woollen and hempen fabrics. Jewelry from Tibet and China, formerly deposited in Higinbotham Hall, is now installed in three standard cases on slanting shelves covered with black velvet. The installation is well provided with photographs depicting the wearing of the jewelry. This installation presented technical difficulties of great complexity, all of which have been overcome. In December the three jewelry cases, also one from Hall 54, were moved to alcoves 121 and 122, North Court. Two cases containing Tibetan religious paintings were installed in Hall 49. The Chinese bronzes temporarily placed in the North Court were transferred to the East Annex and permanently installed in standard cases. They now occupy altogether eleven cases, and are arranged in strictly chronological order. In consequence of this addition, a reorganization of the Chinese Halls became necessary. The paintings were removed from Hall 43 and 44 to Hall 47 and replaced by nine cases of bronze. For technical reasons two cases of bronze have to remain in Hall 49. The interesting and instructive models of boats and palanquins, acquired at the World's Columbian Exposition, were permanently

installed in two standard cases placed in Hall 53, each model being provided with a descriptive label. The imperial jade book and jade seal presented by Mr. von Frantzius are temporarily installed in Hall 45, in such a manner that they can be freely viewed from all sides. The two detached jade tablets purchased a year ago were added to these exhibits. A special case was constructed for the large brass temple-lamp from India, secured during the time of the Columbian Exposition. The Japanese tapestry, formerly in Hall 31, was moved to Hall 56 into its appropriate surroundings. Mr. Ayer's gift of four Moro guns necessitated the reinstallation of two cases containing Moro armor. The New Caledonian collection, installed in eight cases by Assistant Curator Lewis, is especially interesting for its rare old masks and fine assortment of weapons, notably the stone-headed clubs, one of which is said to be the largest in existence, and was the property of one of the famous chiefs in New Caledonia. Other objects of significance are the house-posts and ornaments, native money, and the old-style clothing and ornaments, especially the green-stone necklaces representing the most highly prized treasures of a New-Caledonian woman. Five cases containing material from the Solomon Islands were also installed. The installation of the Stanley McCormick Hopi Collections has progressed satisfactorily, ten cases having been completed. Five of these cases comprise 150 masks and head-dresses, shown upon freshly painted plaster busts, in their proper groupings and sequence. Three cases are filled with modern domestic pottery, two of unpainted, one of painted ware, in their groupings, as recognized by the Hopi themselves. The series of fifty objects showing the manufacture of pottery is very complete and instructive. One case includes rattles of every type, in fact, all musical instruments used by the Hopi, except drums. In another case are displayed the rabbit sticks, raw skins, and the rabbit-skin robes which are purely woman's work, no man being allowed to be present during their making. In the North Court, three cases have been installed; namely one of Etruscan *Bucchero* ware variously decorated, another of vessels with red designs on black ground. The third is occupied by bronzes which include the two *cistas* purchased last year, all being obtained through the efforts of Mr. Ayer. These cases, newly installed, necessitated some rearrangement in which the two candelabra cases and one of bronze pails were moved to the east line of cases in the Court where the three cases of Irish art-work have stood for years. These had been placed previously in alcoves 121 and 122. Minor transfers of material have also been made in this Court. The two cases containing antique glass in the North Court have been reinstalled upon a new principle of open shelving

which fully exhibits the beauty of form, wonderful colors, and iridescence of these specimens. The Pompeian collection secured by the Director in San Francisco is temporarily installed in a hanging wall-case in alcove 121, North Court, and is completely labeled. When alcove 120 was vacated to make room for exhibits of the N. W. Harris Public School Extension, the Roman mills, braziers, and other objects were rearranged in the Court as best as its crowded condition would permit. A portion of the ethnological material obtained by Dr. Dorsey in India through the liberality of Messrs. Homer E. Sargent, Cyrus H. McCormick, and Martin A. Ryerson, has been placed temporarily in two wall cases in alcove 122. In H. N. Higinbotham Hall there have been some changes in installation as well as rearrangement. Hanging-cases 21 and 22, on the South Wall, were stripped of Algerian jewelry, and in its stead was placed the Turkish, Armenian, Syrian, and Arabian jewelry, formerly in case 17, along with the Bulgarian jewelry from case 19. In the vacated space in case 19 were temporarily placed Tibetan charm-boxes and earrings. Tibetan jewelry, consisting of rings, bracelets, and hairpins, was also transferred from case 20 to case 19. The Algerian jewelry from cases 21 and 22, along with a more recent accession of the same material, was installed in the new case on the East Wall of the hall. Some Colombian gold objects were taken from the floor of case 24 and placed upon the floor of case 23. When the Tibetan jewelry was removed from cases 19 and 20 for permanent installation in Hall 49, a reinstallation of case 20 was made necessary. This installation brought about some rearrangement of cases, Nos. 17 and 18 being moved from the East Wall to the North Wall, bringing all the jewelry from India into a single group. Case 23 and a new case were moved into vacated space upon the East Wall. Since Hall 48, East Annex, utilized for several years past as a work-room, was needed for the further exhibition of the Mrs. T. B. Blackstone collections, the north end of Hall 71 was cleared of all ethnological material stored there and equipped as a work-room, being in close proximity to the vast Pacific Island collections yet to be installed and stored in the West Annex, there to await removal into the new building. To better condense the ethnological material in the south end of Hall 71, the Volk collection and other material intended for exchange, as well as the large model of the Ruins of Mitla, Mexico, have been placed in Hall 68, now to be utilized for general storage. Six cases, heavily loaded with storage material, were taken from Hall 71 and placed in Hall 72 for early installation. The two cases of stored Australian material now stand in Hall 80, having been moved there from Hall 72. The drums, previously stored in Halls 79 and 80, having been shifted to Hall 68; those

two halls, with cases placed to the best advantage, will afford parking for fifty cases of the Joseph N. Field Melanesian Collections to be installed. Preservation of material, photographing, and rearrangement have necessitated work in one hundred cases of the Department during the year. Hall 48 in the East Annex was originally intended to serve as a gallery of Chinese painting. In view of the new material expected soon from San Francisco, however, this plan has been abandoned, and the hall will be reserved for the reception of the pagodas and other new acquisitions. The former plaster-room has been divided by a partition-wall into two rooms.

The Department of Botany has installed 39 new case-units in the public exhibition series, while 17 others have been reinstalled and augmented with new and interesting material. Of these cases 15 were added to the Systematic Economic Series; 37 to the North American Forestry Series; and 4 to General Dendrology. To the North American Forestry Series monographs of the following trees were added: Red or Pencil Cedar, Mountain Pine, Pitch Pine, Chestnut Oak, Yellow Locust, Honey Locust, Cork Elm, Red Spruce, Red Ash, Butternut, Chestnut, Hop-Hornbeam, Fraser's Umbrella Tree, Cucumber Tree, Beech, Sourwood, Yellow Poplar, Pennsylvania Cherry, Fraser's Fir, Sweet Buckeye, Black Willow, Sweet Birch and Yellow Birch. To the Dendrologic Series was added a display, in four cases, of the woods of the Hawaiian Islands, representing, with fair sized specimens, the trees of the islands as described in the new work of Mr. Joseph F. Rock. To the Systematic Economic Series a case was added displaying the fruits, gums, and tan and dye barks belonging to the Combretum and Mangrove families; one with similar products derived from the Combretum and Spikenard families; two cases devoted to the derivatives of the Birch family; one to those of the Willow, Myrtle and Walnut families; two to the Walnut family alone; one additional to the Oak family; one to the Sapodilla family and one each to the Spurge and the Daisy families. On account of lack of cases and cramped quarters in the rooms devoted to the working herbarium, it became necessary to entirely reorganize the collections during the year. In order that the material most frequently consulted might be readily accessible the Eurasian and African material was removed from the organized herbarium and placed in a series of metal storage cans racked in the mounting room on the first gallery; and the West Indian, Central and South American specimens rearranged in like storage cans racked above the regular herbarium cases. This divides, temporarily, the organized reference collection into three parts. In all three the plants are fully arranged in the order of modern classification. While not so conveniently referable

as when all like material is together, yet the collections are consistently available, until such time as they can be reassembled in the herbarium hall of the new Museum building.

In the Department of Geology a complete readjustment of the cases in Skiff Hall was made in order to give better lighting and grouping. Formerly the low cases had been arranged on one side of the hall and the high cases on the other, but as the amount of light obtained by this method of arrangement was insufficient, the cases have now been arranged so as to form a series of alcoves with the taller cases forming the sides of the alcoves and the lower ones occupying the center. The lighting by this arrangement is much more satisfactory. Six of these alcoves were placed on each side of the main passageway through the hall, the forming of these alcoves having required the readjustment of 56 cases. From most of these cases it was also necessary to entirely remove the specimens and reinstall them. In this connection the opportunity was improved to perfect the order of the specimens so as to bring related groups as close together as possible. The exterior woodwork of the cases was also entirely refinished. Space was found in the cases for several new series, among them being a series of bonanza silver ores from Mexico and a collection illustrating the nature and origin of certain "porphyry coppers." To the rare earths collection a radiograph was added made by exposing a lead object to the emanations from carnotite. This was installed with other radium ores as a means of showing the best method of detecting such ores. A portion of the collection of gold ores was removed to make room for a model of a gold mine constructed by the Assistant Curator. This model represents methods of working a small gold mine of medium richness in a vertical quartz vein six feet wide. The background and above-ground scenery were prepared from studies of Arizona landscapes from photographs made by the Curator. The model occupies a space of four by three feet with a depth of about six inches. It illustrates a mine worked by levels connected by a shaft. The ore is represented as a vein of quartz containing minute particles of free gold. At one side the vein is represented as intersected by another running from the front to the back of the model. The ground about this vein is supposed to be looser than at the side and a different method of timbering is illustrated. To illustrate the methods of removing the ore several stopes are shown as well as raises and winzes. Various features of mining equipment are also represented such as head frames, shaft house, tramways, ore cars, pump, etc. The scale of the model is five feet to the inch, and pains were taken to have it represent different features of a well managed mine as far as possible. In all parts of the economic collections

there has been a constant addition of new material in the form of single specimens or small groups. Room for these has for the most part been obtained by withdrawing older specimens from exhibition. Space for increase in the number of rare earths and tungsten ores was obtained by withdrawing a portion of the antimony collection from exhibition. A collection of rocks from German coal fields which was properly a part of the coal collections not now on exhibition was withdrawn and the space gained utilized for the display of three new collections more in harmony with adjacent exhibits. One of these is a collection of fuller's earths from the most important American localities; another is a series illustrating the raw materials, intermediate and final products of Portland cement; and the third collection is one giving a synopsis of the uses of quartz and quartz sands. In this collection numerous specimens show the more common occurrences of quartz; then the grades of quartz used for the more valuable products, such as prisms, lenses and blown quartz utensils; and a third section shows specimens of the poorer qualities of quartz used for more ordinary purposes and sands suited to many special uses. These collections were installed in Hall 35. By reinstallation and some crowding of specimens a much enlarged collection of barite has been accommodated in the space formerly devoted to fewer specimens of this mineral. To the collection illustrating products of coal tar, some of the better known medicinal substances made from it such as phenacitin and acetanilide have been added. In Higinbotham Hall all the specimens were removed from the four central gem cases, the cases lined with new white silk and the specimens reinstalled. This work was necessitated by the fact that the old linings had become worn and faded. New linings were also provided for the upper parts of these cases and shelves of finished glass supported by glass pillars were put in place of the rough shelves swinging on chains which had hitherto been used. A new series of moss agates and jaspers was installed and some other minor changes were made. In Alcove 105, leading to Higinbotham Hall, the collection numbering 163 specimens illustrating the varieties and occurrence of amber which was obtained last year was installed. This collection illustrates different forms and colors of crude amber, forms and colors of pressed amber or ambroid, carvings in amber, fossils found in amber, distillation products of amber, etc. The collection was installed on a series of glass shelves, each specimen being secured to an individual mahogany stand. In front of each specimen was placed a label secured by an individual clip. To the exhibition series of systematic minerals about fifty specimens of recent accessions were added. The series of Salt Lake products was

installed in a case with other salts in Hall 31. The fossil Carboniferous tree from Michigan obtained from the St. Louis Exposition was installed in Hall 33 in connection with other fossils from this period. The series of Carboniferous crinoids and batrachians acquired during the year was similarly installed. The work of mounting the invertebrate fossils upon tablets suitable for installation in floor cases was carried on during the year as opportunity permitted and about 300 specimens were so prepared. Practically all the Pleistocene invertebrate fossils have now been mounted in this way and some other series have been completed. The Pleistocene fossils prepared were installed temporarily in a case in Hall 33. Specimens chiefly of Pleistocene and Tertiary invertebrates which had been on exhibition were removed from two wall cases and the cases placed in position in Hall 35 to receive the skeleton of the sabre-tooth tiger and other important specimens of the large collection of vertebrate fossils from California presented by Messrs. Ayer, Butler, Linn and Ryerson. By use of these two cases it was possible to place a representative series of these fossils on exhibition. The specimens installed include a complete mounted skeleton of the sabre-tooth tiger, several skulls of the same species, several skulls and a large number of bones of the fossil wolf, skulls and limb bones of the ground sloth, limb bones of the mastodon and horse, skulls and other bones of the bison, and skulls and other bones of various vulture-like and other birds. In order to make room for the additional cases and secure a better grouping of the specimens, some readjustment of the large cases in the Hall was also made. The specimens of fossil elk skull and horns from Palos Park, Illinois, presented by Mr. H. H. Honink, were also installed in this Hall. In Hall 59 a disarticulated skeleton of the sabre-tooth tiger was installed in a table-case, with each bone labeled so that the anatomical features of the skeleton may be readily studied. In the laboratory of vertebrate palaeontology a model of the jaws of the great Eocene shark *Carcharodon* was completed, pains being taken to have the anatomical details as nearly correct as possible. The jaws, as completed, have a width of over six feet and an opening of four feet. For the first row of teeth actual fossil specimens were used and for the succeeding rows casts of these. The modeling of the lines of the jaw was based on careful studies of modern sharks. By careful attention to all these details it is believed that the characters of the ancient shark jaw are reproduced with great fidelity in this model. Owing to lack of space the model has not been placed on exhibition but will be available for the new building. The mounting of the skeleton of the sabre-tooth tiger received from California was modified so as to

give greater rigidity and a more natural pose and it was placed upon a new base. A skull and jaws of the Miocene horse, *Parahippus*, were prepared for exhibition and the mounting of a skeleton of the Miocene camel *Oxydactylus* was nearly completed. The large collection of fossil bones from the Los Angeles asphalt beds, numbering nearly 3000 specimens, was taken to Whiting, Indiana, where, through the courtesy of the Standard Oil Company, complete facilities were provided for soaking the bones in naphtha and thus dissolving out the tarry material. This treatment of the specimens was necessary to avoid the slow exudation of the asphalt which experience had shown would otherwise occur and cause injury to the interiors of the cases. The generosity of the Standard Oil Company in this connection is gratefully acknowledged.

In the Department of Zoology the collection of mammals in alcohol has been overhauled and fully identified. The collections of birds, mammals and insects were disinfected. The skins of the large mammals stored in the basement of the Museum are now reasonably accessible; only little progress has been made in completing the tanning of such skins as still remain in a raw state, the skin dresser having been occupied the greater part of the year on fresh material. Three large groups of birds, provided by the Stanley Field Ornithology Fund, have been finished and placed on exhibition. They represent bird life in Tropical America. (1) Oil birds, *Steatornis caripensis*. This group shows breeding birds in a cave in which they live, and illustrates a form of bird life of great interest. The material for the group was secured by the Museum South American Expedition on the Island of Trinidad in 1914. (2) Group of Screamers and Scarlet Ibis. A striking and instructive group, also obtained by the Museum Expedition near Lake Maracaibo, Venezuela. This group contains specimens of both the curious Horned Screamer and Crested Screamer, together with a number of richly colored Scarlet Ibis, and forms one of the most attractive groups. (3) Group of American Flamingoes on their breeding ground on the Island of Great Inagua, Bahama Islands. The group shows 7 adult Flamingoes, with their peculiar cone-shaped nests, eggs, and two young birds in the nest. The painted background shows a continuation of the "rookery" which in the Inagua Colony numbered about 1,000 nests. The painted backgrounds of these groups greatly enhance their educational value, as the observer is able to become familiar with the natural environment of the species. During the year the taxidermists have been engaged in preparing an exhibition group of Alaska Moose, which is now nearly ready for installation. Considerable preliminary work has also been done on two other mammal groups, a group of

Olympic Elk and one of the Capybara and Jaguar. A small group of Thirteen-lined Ground Squirrels or "Striped Gophers" has been completed and is ready for installation. The exhibition collection of fishes was increased by the addition of a large sectional case containing on one side two large and eighteen small groups of Florida fishes, on the other side the same number of groups of fishes from California, the latter including very fine specimens of Salmon. A large group of Flying Fish is in course of preparation. The Wild Turkey group was improved by the substitution of a fine male bird for the younger one temporarily installed when the group was made. In the same way a rather small Canada Goose was removed from the Saskatchewan group and replaced by a fine large old bird. An Asiatic Elephant and a Giraffe, which through age and imperfection were undesirable for exhibition purposes, have been withdrawn and placed in storage to be sold or exchanged. Throughout the year the reinstallation of the shell exhibit has been carried on by Assistant Curator Gerhard and Preparator Liljeblad. Four of the new A-cases have been permanently installed, and two more filled temporarily with shells which were glued on tablets last year. In addition, enough shells have been remounted to fill three more cases, for two of which labels are ready. Installing the shells on individual shelves cannot be done so expeditiously as when the specimens are mounted on tablets, for which reason the work is consuming more time than was anticipated. In the division of Osteology 2 skeletons of Porpoise and 7 skulls were degreased at the Whiting degreasing plant; 8 skeletons of animals were prepared for the Osteological study collection and 4 skeletons were remounted; 367 skulls were prepared and cleaned for the Systematic study collection.

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION OF FIELD MUSEUM OF NATURAL HISTORY.

—Early in May 1914, Mr. N. W. Harris offered to bear the expense of an exhibit at the Panama-Pacific International Exposition, of a number of cases, typical of those being circulated among the public schools of Chicago, under the auspices of The N. W. Harris Public School Extension of Field Museum of Natural History. This generous offer was approved by the Director and accepted by the President. The Curator was instructed to select such types of cases as would illustrate the nature and character of the work that was being devoted to Museum Extension. He was also instructed to make arrangements for suitable and adequate space for exhibiting the cases, to determine the architectural plans for the space, to make all arrangements for packing the cases and shipping same, and to depart for San Francisco in time to install the exhibit at the Exposition for the opening day, February 20th. Thirty-

four cases of natural history and economic subjects were selected and exhibited in the Palace of Education of the Exposition. The space allotted the exhibit, amounting to approximately 1300 square feet, was favorably and prominently located on three well traveled aisles. The exhibition of the cases was supplemented by motion pictures, illustrating the present and future Museum buildings, types of cases on standards, loading cases in delivery car, car leaving Museum, and arriving at school unloading cases, reception of cases in classroom, case on rack in classroom, pupils studying case in classroom and teacher using case as a means of teaching. These views were prefaced with an introduction on the cause and scope of the Museum Extension. The exhibit and the motion picture theatre were attended daily by large numbers of visitors, whose interests were manifested in many instances, by words of commendation for the work that is being carried on, and praise for the attractive physical features of the cases. Representatives of foreign and American institutions of learning made repeated careful and thorough examinations of the exhibit and enquiries as to methods of using the cases in schools. Japan, through its Commissioner General to the Exposition, requested several cases of economic subjects be sent to Tokyo for the purpose of studying them, with a view of introducing similar cases and the same system in the schools of Japan. Twenty-five thousand illustrated pamphlets describing in brief the Museum Extension, were circulated during the exposition period. Five thousand cards were mailed to educators of the United States and Canada inviting them to inspect the Museum exhibit at the Exposition. Doctor Maria Montessori, internationally known as an educator of children, said of this exhibit in an unsolicited letter.

"I admire very much the way in which nature is interpreted in this exhibit. The units attract the child's attention and do not teach errors.

"They truly represent nature. Besides, they have added value of permitting prolonged observation of the many details which in nature could only be seen in passing glimpses and to which it would be hard to attract the child's attention. The knowledge of these facts observed in this way makes the future observation of real nature more interesting to the child.

"I consider this collection a most desirable contribution to school work and education generally. I hope that more of these beautiful exhibits may be made."

In a competitive group this exhibit was awarded the grand prize, the highest award possible.

Many additional cases of various subjects were prepared during the year, bringing the total number of cases available for circula-

tion among the schools to about 390. While the weight of the delivery car is thought to be heavier than necessary, the designing of the carrying accommodations continues to meet with approval. It has a capacity of 45 cases. Requests for cases have been made by schools and community clubs in towns near Chicago. Delivery of cases was made to about 280 Main Schools. Each of these schools was provided with no less than 6 cases. The Board of Education continues to furnish to the classrooms, the standards upon which the cases are displayed for observation and study.

PHOTOGRAPHY AND ILLUSTRATION.— The following is a tabulation of the work performed in this Section:

	Number of Negatives made	Number of Prints made	Number of Lantern Slides made	Number of Enlarge- ments made	Number of Negatives developed for Expe- ditions	Number of 6½x2½ Posi- tives made. Used in making large Negatives
General	12	200	..	..	..	..
Anthropology	352	175	..	8	..	8
Botany	5	399	2	..	..	..
Geology	14	101	2	..	..	..
Zoology	26	15	..	..	72	..
Harris Extension	33	5	..	..	..	..
Distribution . . . . .	..	165	..	..	..	..
Gift . . . . .	..	410	12	..	..	..
Sale	11	444	5	..	..	..
Totals	453	1,914	21	8	72	8
Total number of Catalogue entries during year 1915						2,476
Total number of Catalogue entries to December 31, 1915						113,303
Total number of Record Books						17

PRINTING.— The number of labels and other impressions made by the Section of Printing is as follows:

	Exhibition Labels	Other Impressions
Anthropology	2,624	23,335
Botany	1,065	22,950
Geology	1,954	....
Zoology	3,936	1,875
Library . . . . .	.....	7,225
General . . . . .	.....	35,709
N. W. Harris Public School Extension	566	950

ATTENDANCE.— The total attendance record for the year is 194,926. Appended is a list of the classes, consisting of twenty or more pupils, that visited the Museum during the term under review:

Schools and Locations.	Teachers	Pupils
Forestville School — Forty-fifth Street and St. Lawrence Avenue .	1	25
St. Louis School — 11715 South State Street	1	24
Francis W. Parker — 6800 South State Street	6	38
University High School — Chicago, Illinois	1	21
McLaren — York and Laflin Streets	1	49
Lane Technical High School — Division and Sedgwick Streets . .	1	107
Colman — 4655 South Dearborn Street	3	42
University High School — Chicago, Illinois	1	20
University Elementary — Fifty-ninth Street and Kenwood Avenue	1	20
Chicago Academy of Fine Arts	2	80
Lowell — Hirsch Street and North Spaulding Avenue	1	30
St. Patrick's School — 2303 Park Avenue	3	42
St. Elizabeth's School — 13 East Forty-first Street	3	52
St. Catherine's School — 118th Street and Lowe Avenue	2	52
Illinois University — Urbana, Illinois	0	21
Morgan Park Prep. School — Morgan Park, Illinois	1	23
St. Ignatius Academy — 6835 Broadway	1	68
Parker School — 6800 South Stewart Avenue	1	32
Holy Trinity High School — South Lincoln and West Taylor Streets	2	27
Heavville Township School	1	28
Raymond School — Wabash Avenue and Thirty-sixth Place . . .	1	38
University Elementary School — Fifty-ninth Street and Kenwood Avenue	2	22
Hyde Park High School — Sixty-second Street and Stony Island Avenue	2	115
University Elementary School — Fifty-ninth Street and Kenwood Avenue	3	20
St. Bridget's School — Archer Avenue Corner of Grady Court . .	1	30
Francis W. Parker — 6800 South Stewart Avenue	1	39
Gary School — Gary, Indiana	1	78
Brownell School — 6509 Perry Avenue	1	38
Norwood Park School — 5850 Hurlbut Street	1	23
Sumner School — South Kildare Street and Colorado Avenue . .	1	33
Ray School — Fifty-seventh Street and Kimbark Avenue	1	32
Lewis Champlin School — Sixty-second Street and Stewart Avenue	2	23
Darwin School — Edgewood Avenue and Catalpa Court.	2	53
Willard School — Forty-ninth Street and St. Lawrence Avenue. .	1	30
Curtis School — 115th Street and State Street	1	42
Gladstone School — Robey Street and Washburne Avenue . . .	2	30
Cornell School — Seventy-fifth Street and Drexel Avenue . . .	1	20
Holy Cross School — Sixty-fifth Street and Maryland Avenue . .	2	35
Spencer School — Park and Fiftieth Avenues	1	20
Goodrich School — Sangamon and Taylor Streets	1	25
Washburne School — Fourteenth between Jefferson and Union Streets	1	23
Poe School — Fulton and One Hundred Sixth Streets	2	30
Barnard School — Charles and One Hundred Fourth Streets . . .	1	21
Scanlan School — Perry Avenue between 117th and 118th Streets .	1	34

Schools and Locations		Teacher	Pupils
Winnethka School — Winnethka, Illinois		6	37
Zion Jewish School — 1261 South Halsted Street		1	35
Juvenile Protective League — Blackhawk and Noble Streets		0	22
Roseland Christian School — Roseland, Illinois		1	23
Madison School — Seventy-fifth Street and Dorchester Avenue		1	32
Goodrich School — Sangamon and Taylor Streets		3	45
Wendell Philipps High School — Thirty-ninth Street and Prairie Avenue		1	20
Englewood High School — Sixty-second Street and Stewart Avenue		1	44
Washington School — Morgan and Grand Avenues		1	54
Irving School — Lexington and South Leavitt Streets		1	33
Morgan Park High School — Morgan Park, Illinois		1	81
St. Andrews School — Hammond, Indiana		5	83
University Elementary — Fifty-ninth Street and Kenwood Avenue		2	23
University Elementary — Fifty-ninth Street and Kenwood Avenue		2	24
University High School — Chicago, Illinois		0	32
University of Chicago		0	52
University of Chicago		0	40
Horace Mann — Thirty-seventh Street and Princeton Avenue		6	37
Sullivan School — Eighty-third Street and Houston Avenue		1	27
John McLaren School — York and Laffin Streets		1	46
Dalton School — Dalton, Illinois		2	43
West Hammond School — Hammond, Indiana		1	20
University of Chicago		2	22
Flower High School — Twenty-sixth Street and South Wabash Avenue		1	30
Jewish Training School } 534 West Twelfth Place		1	35
Jewish Training School }		1	41
University High School — Chicago, Illinois		1	35
Pullman Manual Training School — Pullman, Illinois		1	25
Parker High School — Sixty-eighth Street and Stewart Avenue		1	47
Pullman Manual Training School — Pullman, Illinois		1	25
Bowen High School — Eighty-ninth Street and Manistee Avenue		0	23

Herewith are also submitted financial statements, list of accessions, names of members, etc., etc.

FREDERICK J. V. SKIFF, Director.

FINANCIAL STATEMENT

RECEIPTS AND DISBURSEMENTS

January 1, 1915, to December 31, 1915

RECEIPTS

Cash in Treasurer's hands, General Fund, December 31, 1914 . . .	\$10,828.95	
Cash in Treasurer's hands, New Exhibition Cases Fund, December 31, 1914	3,490.27	
Cash in Treasurer's hands, Endowment Sinking Fund, December 31, 1914	525.00	
Cash in Treasurer's hands, Picture Postal Cards, December 31, 1914 . . .	433.34	
Petty Cash on hand, December 31, 1914	739.95	
Dues of Life Members	1,000.00	
Dues of Annual Members	1,090.00	
Admissions and Check Rooms	5,418.75	
Sale of Guides	150.25	
South Park Commissioners	15,000.00	
Interest on Investments and Bank Balances	9,490.75	
Field Endowment Income	131,500.00	
Field Endowment Sinking Fund	500.00	
Field Endowment Sinking Fund Investments retired	315.00	
Field Endowment Sinking Fund Income	220.99	
New Exhibition Cases Fund Investments retired	7,070.00	
New Exhibition Cases Fund Income	620.88	
New Building Moving and Furnishing Fund Income	175.00	
Stanley Field Ornithology Fund	600.00	
H. W. Jackson Library Fund Income	58.28	
Donations:		
Martin A. Ryerson	\$1,250.00	
Homer E. Sargent	2,175.00	
Cyrus H. McCormick	1,000.00	
Fritz Von Frantzius	1,500.00	
Edward E. Ayer	250.00	
Edward B. Butler	250.00	
W. R. Linn	250.00	
Stanley Field	200.00	
Arthur B. Jones	200.00	7,075.00
Life Memberships Fund Income	409.94	
Life Memberships Fund Investments retired	256.69	
Sale of Picture Postal Cards	587.53	
Sundry Receipts	71.60	
		<hr/>
		\$197,628.17

DISBURSEMENTS

Salaries		\$70,511.91
Guard Service		11,955.87
Janitor Service		6,757.51
Fire Protection		4,306.72
Heat and Light		12,125.73
Repairs and Alterations:		
Wages — Carpenters, Painters, Roofers, etc.	\$7,715.41	
Materials used — lumber, paints, oils, glass, etc.	1,179.03	8,894.44
Furniture and Fixtures — Cases		10,263.44
The Library:		
Books and Periodicals	1,091.37	
Binding	588.71	
Sundries	89.05	1,769.13
Collections, etc., purchased		37,351.92
Installation expense		2,291.83
Expeditions		4,300.00
Publications		1,778.50
Sections of Photography and Printing — Supplies		353.68
General Expense Account:		
Freight, Expressage and Teaming	2,204.13	
Stationery, Postage and Telephones	747.45	
Liability Insurance	663.52	
Picture Postal Cards	645.27	
Sundries	889.95	5,150.32
Stanley Field Ornithology Fund		724.75
Woman's Temple Building Association — Foreclosure Expenses		2,407.18
H. W. Jackson Library Fund — Investments		68.70
New Building Moving and Furnishing Fund — Investments		7,245.00
Life Memberships Fund — Investments		1,666.63
Endowment Sinking Fund — Investments		1,509.26
Picture Postal Cards — Certificate of Deposit		375.60
In Treasurer's hands, December 31, 1915:		
General Fund	4,126.39	
New Exhibition Cases Fund	917.71	
Endowment Sinking Fund	36.00	5,080.10
Petty Cash on hand, December 31, 1915		739.95
		<u>\$197,628.17</u>

ATTENDANCE AND RECEIPTS FROM JANUARY 1 TO DECEMBER 31, 1915

ATTENDANCE.			
Paid Attendance —			
Adults	18,582		
Children	2,210	20,792	
Free Admission on Pay Days —			
School Children	4,296		
Students	3,043		
Teachers	498		
Members: Corporate	21		
Annual	12		
Life	5		
Officers' Families	74		
Special	109		
Press	12	8,070	
Admissions on Free Days —			
Saturdays	42,223		
Sundays	123,841	166,064	
Total Attendance			194,926
Highest Attendance on any one day (August 8, 1915) . .			7,057
Highest Paid Attendance on any one day (July 5, 1915) .			605
Average Daily Admissions (363 days)			536
Average Paid Attendance (260 days)			79

RECEIPTS.	
Guides sold — 601 at 25 cents each	\$ 150.25
Articles checked — 11,045 at 5 cents each	552.25
Admissions	4,866.50
	\$5,569.00

ACCESSIONS

DEPARTMENT OF ANTHROPOLOGY

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

AYER, E. E., Chicago.

Collection of beads and shells found in grave, with two skeletons—
Leadbetter Landing, Benton Co., Tenn.

4 Moro bronze guns (lantaka).

161 chipped obsidian projectile points—Upper Lake, Lake County, Cal.

19 miniature Pomo baskets—Cal.

BAHR, PETER J., Shanghai, China.

6 archaic stone implements—Hupeh Province, China.

18 archaeological specimens of bone, stone, and bronze—Hupeh Province,
China.

BECKER, ROBERT H., Chicago.

1 grooved stone axe—La Paz, Bolivia.

2 pottery fragments — Ruins of Chanchan, Peru.

CARPENTER, MRS. H. I., Chicago.

18 miscellaneous ethnological objects, chiefly Alaska.

CHALMERS, W. J., Chicago.

Roman pottery lamp — Zalathna, Transylvania, Hungary.

Metal charm — Abyssinia.

21 African weapons.

1 Japanese temple gong.

DUNN, MRS. FRANK A., Milwaukee, Wis.

1 counterpane — Philadelphia, Pa.

EGYPTIAN EXPLORATION FUND.

Crystal eye set in copper, from a statue.

Piece of agate for inlaying.

2 fragments lapis lazuli from a jar.

1 lapis-lazuli bead.

EMMONS, LIEUT., G. F., Princeton, N. J.

1 graphite carving of whale — Alaska (exchange).

1 Chinese bronze figure (exchange).

FERNBACH, O. H., San Francisco, Cal.

Pre-Columbian celt of diabase — Quetzaltenango, Guatemala.

FIELD MUSEUM OF NATURAL HISTORY.

Purchases:

Persian chain-mail, helmet with sword, arm-guard, hauberk, and
gauntlet.

15 pieces prehistoric pottery — Walton County, Fla.

1 pottery fragment — Walton County, Fla.

1 skull — Walton County, Fla.

57 Pompeian antiquities in bronze, iron, pottery, and glass — Pompeii.

FISHER, MRS. H. S., Chicago.

Sandstone disc — Ponca Indians, Neb.

FRANTZIUS, FRITZ VON, Chicago.

Collection of Japanese coins, originals and reproductions, made by order of the Japanese Government, complete set consisting of 747 (more or less) metal coins, 31 pieces of paper money, and 5 implements, all mounted and labeled in Japanese, on 50 wooden plates — Tokyo, Japan.

1 imperial jade seal — Peking, China.

1 imperial jade book — Peking, China.

1 gold ring — China.

GUNSAULUS, DR. FRANK W., Chicago.

Rosary of a hundred Burmese amber beads — Peking, China.

HACKETT, E. F., Albany, New York.

2 ancient Chinese bronze coins — third century B. C.

McCORMICK, CYRUS H.; RYERSON, MARTIN A.; SARGENT, HOMER E., Chicago.

General ethnological collection: carvings, textiles, brass, jewelry, etc. — India. Collected by Geo. A. Dorsey.

SARGENT, HOMER E., Chicago.

2 old Navajo blankets.

SMITH, MRS. CAROLINE, Chicago.

4 carved wood images — Congo, Africa.

1 mask — Congo, Africa.

1 small fragment from a tomb — Luxor, Egypt.

SPRAGUE, A. A., 2d, Chicago.

1 Navajo blanket — Southwest, U. S. A.

SUMNER, REV. W. T., Chicago.

1 prehistoric pottery jar — Arizona.

TEASON, WILLIAM, Palos Park, Ill.

1 prehistoric chert arrowhead — Palos Park, Ill.

DEPARTMENT OF BOTANY

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

ARMOUR, ALLISON V., New York, and MILLSPAUGH C. F., Chicago.

12 herbarium specimens — Yucatan and Mexico.

BALL, CARLETON R., Washington, D. C.

3 herbarium specimens — La.

BEBB, HERBERT, Chicago.

4 herbarium specimens — Ill. and Ohio.

1 herbarium specimen — Ill.

BOTANICAL GARDENS, Sydney, N. S. W.

99 herbarium specimens — New South Wales, etc. (exchange).

BOYD, D. H., Whiting, Ind.

1 herbarium specimen — Ind.

BUREAU OF SCIENCE, Manila, P. I.

1367 herbarium specimens (exchange).

CHALMERS, W. J., Chicago.

1 blackthorn shillelagh — Ireland.

CLOKEY, IRA W., Decatur, Ill.

147 herbarium specimens — Mass., Saskatchewan, and Ill. (exchange).

COCKER, W. C., Chapel Hill, N. C.

1 herbarium specimen — S. C.

COPULOS, MILTON D., Chicago.

Wax reproduction of garden cucumber.

CORY, MRS. CHAS. B., Chicago.

5 herbarium specimens — Ill.

COWLES, HENRY C., Chicago.

1 herbarium specimen — Ill.

CURLEY, F. E. A., St. Louis, Mo.

1 Philippine sugar mill — St. Louis Exposition.

DENSLOW, H. M., New York City.

18 herbarium specimens — Vermont, New Jersey, and New York.

FIELD MUSEUM OF NATURAL HISTORY.

Collected by C. F. Millspaugh:

651 herbarium specimens — various localities.

Collected by O. E. Lansing, Jr.:

17 herbarium specimens — Palos Park, Ill.

151 herbarium specimens — Lake Chicago Basin.

Purchases:

689 herbarium specimens — Leyte, P. I.

195 herbarium specimens — Alberta, Canada.

608 herbarium specimens — Mexico.

149 herbarium specimens — Porto Rico.

109 native woods — Sandwich Islands.

200 herbarium specimens — Bolivia.

260 herbarium specimens — Colo.

397 herbarium specimens — Philippine Islands.

1044 herbarium specimens — Cal.

GAUMER, DR. G. F., Yucatan, Mexico.

41 herbarium specimens — Yucatan.

GRAY, HERBARIUM, Cambridge, Mass. (exchange).

1 herbarium specimen — Mexico.

415 herbarium specimens — Texas and New Mexico.

HALL, H. M., Berkeley, Cal.

1 herbarium specimen — Cal.

HERBARIUM BOISSIER, Geneva, Switzerland.

60 herbarium specimens — Brazil (exchange).

HUTCHINSON, MRS. CHAS. L., Lake Geneva, Wis.

1 herbarium specimen — Wis.

JOHNSON, FRANK W., Chicago.

118 herbarium specimens — Wis.

KEW HERBARIUM, London, England.

2 herbarium specimens West Indian boxwood — Venezuela.

KING, MISS ANNA, Chicago.

3 herbarium specimens — Mich. and Ill.

KNUDSON, PEDER, Ephraim, Wis.

1 specimen beech nuts — Ephraim, Wis.

40 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

- KUSSNER, ALBERT, Chicago.
1 old spinning wheel.
- LANSING, O. E., JR., Chicago.
1 weathered root — Ind.
- LOEB, JACOB A., Chicago.
24 herbarium specimens — New York.
- MANCHESTER MUSEUM, Manchester, England.
1 blackthorn shillelagh — Ireland.
2 masses Kelp potash — Ireland.
- MILLSPAUGH, C. F., Chicago.
Wax reproduction of Japanese persimmon and of sassafras fruits.
2 herbarium specimens — Chicago.
84 herbarium specimens — Ephraim, Wis.
- MOYER, LYCURGUS R., Montevideo, Minn.
30 herbarium specimens — various localities.
- MUSSELMAN, V. G., Quincy, Ill.
2 specimens fungi — Ill.
- NATAL BOTANICAL GARDEN, Berea, Natal.
101 herbarium specimens — South Africa (exchange).
- NEW YORK BOTANICAL GARDEN, Bronx Park, New York City.
6 photographs of Wright's Cuban Coccozobi (exchange).
4 herbarium specimens — Porto Rico (exchange).
- OWEN, C. L., Chicago.
2 herbarium specimens — Ariz.
- PADILLA, SR. SISTO ALBERTO, El Salvador, San Salvador.
1 bundle grass — El Salvador.
- PARISH, S. B., San Bernardino, Cal.
10 herbarium specimens — Nev. and Cal.
- PARKE, DAVIS & COMPANY, New York.
1 herbarium specimen — Yucatan.
- PFEIFFER, MISS NORMA E., Chicago.
1 type specimen *Thiamia americana* — Ill.
- SHERFF, EARL E., Chicago.
1 herbarium specimen — France.
672 photographs of type sheets of *Bidens* and *Cosmos*.
232 herbarium specimens — Ill. and Ind.
- SMITH, HURON H., Portland, Oregon.
53 herbarium specimens — Oregon.
- TYRELL, E. R., Chicago.
1 fungus — Chicago.
1 fungus *Crucibulum vulgare* — Chicago.
- U. S. DEPT. OF AGRICULTURE, Washington, D. C.
47 herbarium specimens — Siberia and China (exchange).
- U. S. NATIONAL HERBARIUM, Washington, D. C.
228 herbarium specimens (exchange).
201 herbarium specimens of grasses (exchange).
- UNIVERSITY OF CALIFORNIA, Berkeley, Cal.
2 portions of type plants — Mexico.
- WILBER, MARSHALL D., Chicago.
4 specimens Malayan plantation rubber.

DEPARTMENT OF GEOLOGY

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

ALEXANDER, W. B., Scales Mound, Ill.

3 specimens vanadinite — Tucson, Ariz.

AYER, E. E.; BUTLER, E. B.; LINN, W. R.; RYERSON, M. A., Chicago.

2111 specimens fossil vertebrates — Rancho La Brea, Cal.

BAEKELAND, DR. L. H., Yonkers, New York.

1 specimen bakelite.

BAILEY, DR. E. S., Chicago.

2 specimens glass colored by mesothorium.

BEEB, DR. WM., Chicago.

532 specimens bones of fossil vertebrates — Rancho La Brea, Cal.

BRADFORD, PERRY, Centerton, Ind.

5 specimens sapphire — Centerton, Ind.

BRITISH COMMISSION, LOUISIANA PURCHASE EXPOSITION, St. Louis, Mo.

1 specimen magnesite — India.

1 specimen manganese ore — India.

BROWN, MRS. A. S., East Stoneham, Maine.

1 feldspar crystal — East Stoneham, Maine.

CHALMERS, THOS. S., Chicago.

1 specimen gold ore — Smuggler-Union Mine, Telluride, Colo.

CHALMERS, WM. J., Chicago.

60 specimens minerals and ores — various localities.

1 specimen silver-lead ore — Kellogg, Idaho.

2 specimens gold — West Coast of Africa.

CHEROKEE CHEMICAL CO., Kings Creek, S. C.

2 specimens barite — Kings Creek, S. C.

COLORADO-YULE MARBLE CO., Marble, Colo.

6 polished slabs Colorado-Yule marble — Marble, Colo.

DERR, H. B., Sikeston, Mo.

3 specimens St. Peter sandstone — Utica, Ill. (exchange).

1 specimen molding sand — Utica, Ill. (exchange).

1 specimen furnace sand — Utica, Ill. (exchange).

30 specimens soils, ochers, clays, etc. — Missouri (exchange).

DESERET MUSEUM, Salt Lake City, Utah.

15 specimens tetrahedrite and pyrite — Bingham, Utah (exchange).

15 specimens products of Great Salt Lake — Great Salt Lake, Utah (exchange).

DUREX CHEMICAL WORKS, New York City.

1 specimen barite — Sweetwater, Tenn.

FARNSWORTH, J. E. and R. M., Lancaster, Mass.

1 specimen fuller's earth — Lancaster, Mass.

FIELD, STANLEY, and JONES, ARTHUR B., Chicago.

2 meteorites — Blanket, Texas.

FIELD MUSEUM OF NATURAL HISTORY.

Collected by O. C. Farrington:

3 specimens granite — Pike's Peak, Colo.

6 specimens gypsum — Garden of the Gods, Colo.

Collected by H. W. Nichols:

5 specimens ores, rocks and fossils — Stony Creek, Granite Co., Mont.
Made in the Departmental laboratories:

1 mine model.

Purchases:

3 specimens volcanic bombs — Idaho.

4 specimens sand-faceted pebbles — Cape Cod, Mass.

5 specimens gold ore — Cripple Creek, Colo.

17 specimens crinoids and other fossils — Kansas City, Mo.

1 specimen Big Skookum meteorite — Yukon Dist., Alaska.

FISHER, MRS. H. S., Chicago.

41 specimens minerals and fossils — various localities.

FLORIDIN CO., Warren, Pa.

6 specimens crude and ground fuller's earth — Quincy, Fla.

FOSHAG, WM., Berkeley, Cal.

8 specimens minerals — Riverside, Cal. (exchange).

GEOLOGICAL SURVEY OF INDIA, Calcutta, India.

3 specimens laterite — Kalahandi, India.

GREEN, JAMES A., Chicago.

1 fossil elk antler — Palos Park, Ill.

1 portion deer antler — Palos Park, Ill.

HANINK, H. H., Palos Park, Ill.

1 fossil elk skull with antlers — Palos Park, Ill.

JEWELL, FRED, Osborne, Kan.

6 specimens fossils — Harlan, Kan.

KRANTZ, DR. F., Bonn, Germany.

1 specimen fossil lizard — Solenhofen, Germany (exchange).

KREBS PIGMENT AND CHEMICAL CO., Newport, Del.

2 specimens barite — Cartersville, Ga.

LESTER CLAY CO., Jacksonville, Fla.

1 specimen each ground and raw fuller's earth — Attapulugus, Ga.

MALLINCKRODT CHEMICAL WORKS, St. Louis, Mo.

1 specimen acetanilide.

1 specimen acetphenetidin.

MANATEE FULLER'S EARTH CORPORATION, Ellenton, Fla.

5 specimens fuller's earth — Ellenton, Fla.

MARSH, C. H., Marshfield, Ore.

3 specimens ores — Ore.

1 specimen natrolite — Myrtle Point, Ore.

MINING MUSEUM, Sydney, New South Wales.

1 print etching figures of Delegate meteorite.

MOSHER, J. H., Glendive, Mont.

8 specimens jasper (cut).

4 specimens agatized wood (cut).

2 specimens moss agate (cut).

1 specimen moss agate pebble (polished).

13 specimens moss agate and jasper — Glendive, Mont. (loan).

NICHOLAS, FRANCIS C., Tucson, Ariz.

1 specimen tungsten ore — Las Guijas, Ariz.

9 specimens copper ores — Nogales, Ariz.

- NORTON, E. G., Chicago.
 3 specimens calaverite — Cripple Creek, Colo. (exchange).
- O'CONNOR, E. S., Mayville, Wis.
 9 specimens iron ore — Mayville, Wis.
- PATTEE, FRED, Chicago.
 6 specimens rock phosphate — Cokeville, Wyo.
 1 specimen argillaceous chalk — Cheyenne, Wyo.
 1 specimen conglomerate — Cheyenne, Wyo.
 25 specimens asbestos, gold and copper ores, etc. — various localities.
 9 specimens copper ore — Globe, Ariz.
 15 specimens vanadium ore — Globe, Ariz.
 3 specimens barite — Wyo.
 3 specimens gold, silver, copper and manganese ores — Ariz. and Wyo.
- PENNSYLVANIA SALT MFG. CO., Natrona, Pa.
 1 specimen pyrite — Rio Tinto, Spain.
- PIERCE, FRANKLIN, Chicago.
 1 specimen eroded quartz — Adamana, Ariz. (loan).
- ROSENBAUM, RUDOLPH R., Chicago.
 2 specimens grahamite — Sardis, Okla.
 1 specimen impsenite — Sardis, Okla.
- ROSS, D. M., Etna, Wyo.
 1 specimen fossil crinoids — Etna, Wyo.
- SCHALL, GEO., Chicago.
 1 specimen schist — Chicago.
- SCOTT, GEO. S., New York City.
 1 specimen psittacinite — Bisbee, Ariz. (exchange).
- TRASON, WM., Palos Park, Ill.
 14 specimens trilobites and other fossils — Palos Park, Ill.
 3 specimens marcasite concretions — Palos Park, Ill.
- THOMPSON, WEINMAN & CO., Nicholasville, Ky.
 1 specimen barite — Nicholasville, Ky.
- TOWER, RAY J., Greenville, Mich.
 1 specimen core sand — Greenville, Mich.
 1 specimen core — Greenville, Mich.
- WILEY, JOHN, Florissant, Colo.
 1 specimen petrified wood — Florissant, Colo.
- WILLIAMS, C. K. COMPANY, Easton, Pa.
 1 specimen talc — Easton, Pa.
 2 specimens ground talc — Easton, Pa.
- WOOD, H. R., Prescott, Ariz.
 4 specimens tungsten ore — Maricopa Co., Ariz.
- ZIEGE, MAX E., Joy, Nevada.
 33 specimens ores — Ruby Mountain Dist., Nevada.

DEPARTMENT OF ZOOLOGY

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

- AMERICAN MUSEUM OF NATURAL HISTORY, Central Park, New York City.
 2 young flamingoes (exchange).

44 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

ARMSTRONG, EDWARD E., Chicago.

1 silver haired bat.

BATY, W. L., South Butte, Mont.

2 flying squirrels — South Butte, Mont.

2 American magpies — South Butte, Mont.

CLAPLIN, B. A., Green Bay, Wis.

1 abnormal domestic duck — Green Bay, Wis.

CLARK, B. PRESTON, Boston, Mass.

24 species hawk-moths.

CURLEY, F. E. A., St. Louis, Mo.

2 jaw bones of whale.

DOUBLER, L., Chicago.

1 ensign fly — Chicago.

1 beetle — Ft. Jennings, Ohio.

EIGENMANN, C. H., Bloomington, Ind.

265 fishes (43 species) — Colombia and Ecuador.

FIELD STANLEY, Chicago.

6 scarlet ibis — Miritiba, Brazil.

109 bird skins — Dutch Guiana.

1 flamingo — Fla.

FIELD MUSEUM OF NATURAL HISTORY.

Collected by R. H. Becker:

1 cockroach — Trinidad, S. A.

Collected by W. J. Gerhard:

87 dragon-flies, grasshoppers, bugs, butterflies, moths, beetles, flies,
bees, wasps and parasites—N. Ind. and Ill.

Collected by J. Friesser:

7 mammals — Wash.

1 beetle — Wash.

Collected by A. B. Lewis:

105 shells — Bismarck Archipelago.

12 shells — Malekula, New Hebrides.

Collected by W. H. Osgood:

50 shells — La Vina, Peru.

2 shells — Balsas, Peru.

Purchases:

1 Alaskan moose — Kenai Peninsula, Alaska.

1 butterfly — Muzo, Colombia.

1 passenger pigeon.

5 frogs — Brownsville, Texas.

8 shells — Brownsville, Texas.

3 passenger pigeons — New York.

1 Rakimo curlew — Canada.

FRIESSER, JULIUS, Chicago.

1 snowy owl — Chicago.

1 wild turkey egg.

GILL, DR. GEO. M., Lebanon, Tenn.

2 beetles — Lebanon, Tenn.

1 horned corydalis — Lebanon, Tenn.

9 parasites—Lebanon, Tenn.

- HENN, A. W., Bloomington, Ind.
1 deer skull — Ecuador.
1 agouti skull — Colombia.
1 rabbit skull — Ecuador.
1 pair deer horns — Colombia.
- HALL, CATHERINE J. and MARTHA O., Chicago.
1 parrot.
- HEIMSTREET, DR. THOS. B., Troy, New York.
1 long-billed curlew—Canada.
- LILJEBLAD, E., Chicago.
27 cicadas, flies, beetles, wasps, parasites, etc. — Ind. and Ill.
- LINCOLN PARK ZOO, Chicago.
1 orang-outang (in flesh).
- ORCUTT, C. R., San Diego, Cal.
255 shells — Cal., Texas, and Mexico.
- PRAY, LEON L., Chicago.
1 calico bass — Jackson Park Lagoon, Chicago.
- RODWAY, J., Georgetown, British Guiana.
2 South American sparrow hawks (exchange).
- ROMANO, JOE, Chicago.
2 pigeons — Jackson Park, Chicago.
1 English sparrow — Jackson Park, Chicago.
- SEWARD, MRS. EMMA MAY, Chicago.
1 saw-fish — Ft. Meyers, Fla.
1 alligator (spoiled) — Ft. Meyers, Fla.
- SIEGEL, COOPER & CO., Chicago.
1 lemur—Madagascar.
- SMITH, HURON H., Ingalls, Ind.
1 red-shouldered hawk — Ingalls, Ind.
- STODDARD, H. L., Chicago.
5 bird lice — Dune Park, Ind.
2 louse-flies — Hyde Ridge, Ill.
- UMBACH, L. M., Naperville, Ill.
10 bugs — Naperville, Ill.
- VOOGDT, CAPT.
1 emu egg — New Guinea (exchange).
- WELCH, WILLIAM, Chicago.
1 lamprey — Jackson Park Lagoon, Chicago.
- WELD, L. W., Evanston, Ill.
4 gall insects — State of Michoacan, Mexico.
3 gall insect guests — State of Michoacan, Mexico.
- WESTCOTT, DR. O. S., Oak Park, Ill.
2 jumping plant-lice.
8 dragon-flies — Ill., Fla., Cal., Mexico, and British Guiana.
- WICKER, MISS CAROLYN, Chicago.
1 mounted ruff of a bustard — India.
- WICKHAM, H. F., Iowa City, Iowa.
3 moths — Koehler, N. M.

46 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

WILLIAMSON, E. B., Bluffton, Ind.

3 red-tailed hawks — Bluffton, Ind.

1 loon — Bluffton, Ind.

1 barn owl — Bluffton, Ind.

WOLCOTT, A. B., Chicago.

4 salamanders — Mineral Springs, Ind.

18 dragon-flies, bugs, beetles, flies, moths and wasps — Northern Illinois.

SECTION OF PHOTOGRAPHY

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

LAUFER, BERTHOLD, Chicago.

188 mounted photographs of scenes and types of natives from Saghalin and Amur region.

FIELD MUSEUM OF NATURAL HISTORY.

Made by the section:

453 negatives of Museum specimens, etc., 1914 prints from same, 21 lantern slides, 8 enlargements, 72 negatives developed for Museum field expeditions, 8 positives for use in making large negatives.

HARRISON, WM. PRESTON, Chicago.

35 photographs of South Sea Islanders.

THE LIBRARY

BOOKS, PAMPHLETS, AND SERIALS

(ACCESSIONS ARE BY EXCHANGE UNLESS OTHERWISE DESIGNATED)

ALABAMA

Agricultural Experiment Station, Auburn 2

Geological Survey, University 1

ARIZONA

Agricultural Experiment Station, Tucson 2

ARKANSAS

Agricultural Experiment Station, Fayetteville 1

CALIFORNIA

Agricultural Experiment Station, Berkeley 7

California Academy of Sciences, San Francisco 2

California Fish and Game Commission, Sacramento 8

California State Board of Forestry, Sacramento 1

California University, Berkeley 16

Cooper Ornithological Club, Hollywood 2

Leland Stanford Junior University, Stanford University 2

Oakland Public Library 1

Pioneer Western Lumberman, Sacramento (gift) 1

Pomona College, Claremont 2

Southern California Academy of Sciences, Los Angeles 1

State Mining Bureau, Sacramento 1

COLORADO

Agricultural Experiment Station, Fort Collins 10

Colorado College, Colorado Springs 3

Colorado Museum of Natural History, Denver	3
Colorado Scientific Society, Denver	1
State Bureau of Mines, Denver	1
State Historical and Natural History Society, Denver	1
University of Colorado, Boulder	2
CONNECTICUT	
Agricultural Experiment Station, New Haven	6
American Oriental Society, New Haven	1
Connecticut Academy of Arts and Sciences, New Haven	3
Connecticut Fish and Game Commission, Hartford	1
Connecticut Geological and Natural History Survey, Hartford	3
Hartford Public Library	2
Yale University, New Haven	4
DELAWARE	
Agricultural Experiment Station, Newark	2
FLORIDA	
Agricultural Experiment Station, Tallahassee	5
State Geological Survey, Tallahassee	2
GEORGIA	
Geological Survey, Atlanta	1
HAWAIIAN ISLANDS	
Agricultural Experiment Station, Honolulu	5
Bernice Pauahi Bishop Museum, Honolulu	2
Board of Agriculture and Forestry, Honolulu	1
IDAHO	
Agricultural Experiment Station, Moscow	1
University of Idaho, Moscow	1
ILLINOIS	
Armour Institute of Technology, Chicago	1
Art Institute of Chicago	2
Cement World Publishing Company, Chicago (gift)	1
Chicago, Geographic Society	1
Chicago Historical Society	1
Chicago Public Library	3
Dial Publishing Company, Chicago	2
Forest and Stream Publishing Company, Chicago	2
Hardwood Record, Chicago (gift)	2
Inland Printer Publishing Company, Chicago	3
John Crerar Library, Chicago	3
Kenfield-Leach Company, Chicago	2
Lake Forest College	1
Lewis Institute, Chicago	1
Mining World Publishing Company, Chicago	2
Newberry Library, Chicago	2
Open Court Publishing Company, Chicago	1
Peoria Public Library, Peoria	1
South Park Commission, Chicago	2
Special Park Commission, Chicago	1
State Board of Agriculture, Springfield	4
State Geological Survey, Urbana	5

48 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

State Historical Library, Springfield	4
State Laboratory of Natural History, Urbana	2
State Museum of Natural History, Springfield	1
University of Chicago	43
University of Illinois, Urbana	19
INDIANA	
Indiana Academy of Science, Indianapolis	1
John Herron Art Institute, Indianapolis	2
Notre Dame University	1
Purdue University, Lafayette	32
Rose Polytechnic Institute, Terre Haute	1
State Board of Forestry, Indianapolis (gift)	1
IOWA	
Forestry Club, Ames	2
Geological Survey, Des Moines	1
Iowa State Horticultural Society, Des Moines	1
State College of Agriculture, Ames	1
State Fish and Game Commission, Spirit Lake (gift)	10
State Historical Department, Des Moines	2
State Horticultural Society, Des Moines	1
University of Iowa, Iowa City	3
KANSAS	
Academy of Science, Topeka	1
Agricultural Experiment Station, Manhattan	8
State Board of Agriculture, Topeka	4
State Historical Society, Topeka	1
University of Kansas, Lawrence	1
KENTUCKY	
Agricultural Experiment Station, Lexington	5
Geological Survey, Frankfort (gift)	2
LOUISIANA	
Agricultural Experiment Station, Baton Rouge	8
Isaac Delgrade Museum of Art, New Orleans	1
Louisiana Historical Society, New Orleans (gift)	1
MAINE	
Agricultural Experiment Station, Orono	2
Bowdoin College, Brunswick	2
Portland Public Library	1
MARYLAND	
Agricultural Experiment Station, College Park	3
Enoch Pratt Free Library, Baltimore	2
Johns Hopkins University, Baltimore	2
State Board of Forestry, Baltimore	1
MASSACHUSETTS	
Agricultural Experiment Station, Amherst	5
American Antiquarian Society, Boston	2
Amherst College	1
Archaeological Institute of America, Boston	1
Boston Museum of Fine Arts	2
Boston Public Library	1

Boston Society of Natural History	1
Cambridge Public Library	1
Clark University, Worcester	2
Essex Institute, Salem	2
Harvard College, Cambridge	4
Harvard University, Cambridge	2
Horticultural Society, Boston	2
Institute of Technology, Boston	2
New Bedford Free Public Library	2
Peabody Institute, Salem	3
Peabody Museum of American Archaeology and Ethnology, Cambridge	2
Phillips Academy, Andover	1
Salem Public Library	2
Springfield Library Association	2
Springfield Natural History Museum	1
Williams College, Williamstown	4
Worcester County Horticultural Society, Worcester	1
Worcester Free Public Library	2
MICHIGAN	
Academy of Sciences, Ann Arbor	1
Agricultural Experiment Station, Agricultural College	4
Detroit Museum of Art	2
Detroit Public Library	1
Geological and Biological Survey, Lansing	3
Grand Rapids Public Library	3
Michigan College of Mines, Houghton	1
National Educational Association of the United States, Ann Arbor	3
State Board of Agriculture, Lansing	1
University of Michigan, Ann Arbor	2
MINNESOTA	
Agricultural Experiment Station, St. Paul	10
Minneapolis Historical Society, St. Paul	3
Minnesota Forestry Board, St. Paul (gift)	1
Minnesota Geological Survey, Minneapolis	1
University of Minnesota, Minneapolis	6
MISSOURI	
Agricultural Experiment Station, Columbia	9
Bureau of Geology and Mines, Jefferson City	1
City Art Museum, St. Louis	1
Missouri Botanical Garden, St. Louis	2
St. Louis Academy of Sciences	1
St. Louis Mercantile Library Association	1
St. Louis Public Library	2
St. Louis University	1
State Historical Society, Columbia	2
University of Missouri, Columbia	2
Washington University, St. Louis	2
MONTANA	
Agricultural Experiment Station, Bozeman	1

50 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

NEBRASKA

Academy of Sciences, Lincoln	1
Agricultural Experiment Station, Lincoln	3
Nebraska Game and Fish Commission, Lincoln (gift)	2
Omaha Museum (gift)	1
University of Nebraska, Lincoln	2
University of Nebraska Forest Club, Lincoln	6

NEVADA

State University, Reno	4
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NEW HAMPSHIRE

College of Agriculture, Durham	4
Forestry Commission, Concord	3

NEW JERSEY

Agricultural Experiment Station, Trenton	12
Craftsman, Eastwood (gift)	2
Geological Survey, Trenton	2
Newark Museum Association, (gift)	1
Newark Public Library	1
Princeton University, Princeton	2
Stevens Institute of Technology, Hoboken	1

NEW MEXICO

Agricultural Experiment Station, Mesilla Park	6
Museum of New Mexico, Santa Fé	36

NEW YORK

Agricultural Experiment Station, Geneva	3
American Geographical Society, New York City	1
American Institute of Mining Engineers, New York City	2
American Museum of Natural History, New York City	25
Brooklyn Institute of Arts and Sciences	6
Buffalo Public Library	1
Buffalo Society of Natural History	1
Carnegie Foundation for the Advancement of Teaching, New York City	1
Cornell University, Ithaca	2
Forestry Quarterly, Ithaca	1
General Education Board, New York City (gift)	1
Hispanic Society of America, New York City	2
Japan Society, New York City (gift)	1
Lake Mohonk Conference of International Arbitration, Lake Mohonk	1
Metropolitan Museum of Art, New York City	6
Munn and Company, New York City (gift)	2
National Association of Audubon Societies, New York City	6
New York Academy of Sciences, New York City	2
* New York Botanical Garden, New York City	1
Pratt Institute Free Library, Brooklyn	2
Public Library, New York City	1
State Library, Albany	7
Staten Island Association of Arts and Sciences, New York City	2
Zoological Society, New York City	3

NORTH CAROLINA

Agricultural Experiment Station, Raleigh	2
Elisha Mitchell Scientific Society, Chapel Hill	1

NORTH DAKOTA

State Historical Society, Grand Forks	1
University of North Dakota, University	1

OHIO

Agricultural Experiment Station, Wooster	30
Chemical Rubber Company, Cleveland (gift)	1
Cincinnati Museum Association, Cincinnati	2
Cleveland Museum of Art	1
Cleveland Public Library	2
Denison University, Granville	1
Geological Survey, Columbus	1
Lloyd Library, Cincinnati	2
Marietta College	1
Oberlin College	1
State Academy of Science, Columbus	1
State Archaeological and Historical Society, Columbus	1
State University, Columbus	18
University of Cincinnati	2
Wilson Ornithological Club, Oberlin	1

OKLAHOMA

Geological Survey, Norman	4
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OREGON

Agricultural Experiment Station, Corvallis (gift)	6
State Board of Forestry, Salem	1
Timberman, Portland (gift)	1

PENNSYLVANIA

Agricultural Experiment Station, Harrisburg	5
American Entomological Society, Philadelphia	4
American Journal of Pharmacy, Philadelphia	1
American Philosophical Society, Philadelphia	1
Association of Engineering Societies, Philadelphia	2
Bryn Mawr College, Bryn Mawr	1
Carnegie Institute, Pittsburgh	2
Carnegie Library, Pittsburgh	6
Carnegie Museum, Pittsburgh	3
Delaware County Institute of Science, Media	1
Dropsie College, Philadelphia	1
Engineers' Society of Western Pennsylvania, Pittsburgh	2
Franklin Institute, Philadelphia	2
Pennsylvania Department of Forestry, Harrisburg (gift)	1
Pennsylvania Museum and School of Industrial Art, Philadelphia	1
Philadelphia Academy of Natural Sciences	1
Philadelphia College of Physicians	1
Philadelphia Commercial Museum	1
Philadelphia Numismatics and Antiquarian Society	1
State Department of Agriculture, Harrisburg	2

52 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

Topographic and Geologic Survey, Pittsburgh	4
United States Indian School, Carlisle	2
University of Pennsylvania, Philadelphia	6
Wagner Free Institute of Science, Philadelphia	1
Wistar Institute of Anatomy and Biology, Philadelphia	8
Wyoming Historical and Geological Society, Wilkes-Barre	1
PHILIPPINE ISLANDS	
Bureau of Education, Manila	3
Department of the Interior, Bureau of Science, Manila	4
Philippine Library, Manila	1
RHODE ISLAND	
Agricultural Experiment Station, Kingston	1
Providence Public Library	2
Roger Williams Park Museum, Providence	1
SOUTH CAROLINA	
Charleston Museum	1
Department of Agriculture, Commerce and Industries, Clemson	1
SOUTH DAKOTA	
Agricultural Experiment Station, Brookings	7
State Geological and Biological Survey, Vermilion	1
TENNESSEE	
Agricultural Experiment Station, Nashville	3
TEXAS	
International Society of Archaeologists, Hico (gift)	1
Scientific Society, San Antonio	10
University of Texas, Austin	3
UTAH	
State Horticultural Commission, Salt Lake City	1
VERMONT	
Geological Survey, Burlington	1
University of Vermont, Burlington	6
VIRGINIA	
Agricultural Experiment Station, Blacksburg	3
University of Virginia, Charlottesville	1
Virginia State Library, Richmond	1
WASHINGTON	
State Geological Survey, Olympia	2
State Library, Seattle	3
WASHINGTON, D. C.	
Biological Society	1
International Bureau of American Republics	2
National Academy of Sciences	3
National Geographic Society	2
United States Government	780
WEST VIRGINIA	
Agricultural Experiment Station, Morgantown	6
University of West Virginia, Morgantown	1

WISCONSIN

Archaeological Society, Milwaukee	1
Beloit College	2
Geological and Natural History Survey, Madison	4
Natural History Society, Madison	1
State Historical Society, Madison	2
State Horticultural Society, Madison	2
University of Wisconsin, Madison	10
Wisconsin Academy of Science, Madison	1

WYOMING

Agricultural Experiment Station, Laramie	3
State Board of Horticulture, Laramie	1

Atkinson, George F., Ithaca, New York	6
Avery, Samuel P., Hartford, Connecticut (gift)	1
Ayer, Edward R., Chicago (gift)	1
Barnes, William, Decatur, Illinois	1
Barrington, D. M., Philadelphia (gift)	1
Bean, Tardeton H., Albany, New York	1
Brandee, Townsend S., Berkeley, California	1
Branner, J. C., Stanford University, California	17
Brimley, C. S., Raleigh, North Carolina (gift)	4
Casey, Thomas L., Washington, D. C. (gift)	4
Chalmers, W. J., Chicago (gift)	5
Cockerell, T. D. A., Boulder, Colorado	11
Collins, G. N., Washington, D. C.	2
Conklin, Edwin Grant, Princeton, New Jersey	1
Coutant, A. F., Ithaca, New York (gift)	1
Cross, Whitman, Washington, D. C.	3
Evans, Alexander W., New Haven, Connecticut	6
Farrington, Oliver C., Chicago	9
Farwell, Oliver A., Detroit, Michigan	3
Felt, E. P., Nassau, New York (gift)	1
Gay, Frederick P., Berkeley, California (gift)	5
Gerhard, William J., Chicago	5
Goldman, E. A., Washington, D. C.	1
Greene, Edward L., Washington, D. C.	2
Hough, Walter, Washington, D. C.	1
Hrdlicka, Ales., Washington, D. C.	1
Hurst, Ethan Allen, Hereford, Texas (gift)	1
Kunz, George Frederick, New York City	2
Lauffer, Berthold, Chicago	8
McCormick, Ryerson, Sargent Indian Expedition (gift)	6
Meek, Mrs. Seth Eugene, Chicago (gift)	1
Merriam, C. Hart, Washington, D. C.	125
Millsbaugh, Charles Frederick, Chicago	90
Moorehead, Warren K., Andover, Massachusetts	1
Morehouse, George P., Topeka, Kansas (gift)	1
Osborn, Henry T., New York City	2
Osburn, Herbert, Columbus, Ohio	2

54 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

Osgood, Wilfred H., Chicago	1
Parke Davis and Company, Detroit, Michigan	1
Penrose, R. A. F., Jr., Philadelphia	2
Randall, T. A., Indianapolis, Indiana (gift)	1
Robertson, James A., Cleveland, Ohio (gift)	1
Schaus, W., Washington, D. C.	1
Thaxter, Roland, Cambridge, Massachusetts	4
Toomey, Noxon, St. Louis, Missouri (gift)	2
Walker, J. W., Chicago (gift)	2
Warren, Charles H., Boston, Massachusetts	1
Willoughby, Charles C., Cambridge, Massachusetts	14

AFRICA

Albany Museum, Grahamstown	1
Department of Mines, Pretoria, Transvaal	1
Geological Society, Johannesburg	3
Geological Survey, Pretoria	1
Institut de Carthage, Tunis	1
South African Museum, Cape Town	2
Transvaal Museum, Pretoria	1

ARGENTINA

Museo Nacional, Buenos Aires	2
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AUSTRALIA

Australian Museum, Sydney	3
Australian Ornithologists' Union, Melbourne	1
Botanic Gardens and Government Domains, Sydney	1
Department of Agriculture, Adelaide	1
Department of Agriculture, Hobart, Tasmania	1
Department of Agriculture, Melbourne	1
Department of Agriculture, Sydney	2
Department of Fisheries, Sydney	1
Department of Mines, Sydney	3
Field Naturalists' Club, Brisbane	1
Field Naturalists' Club, Melbourne	1
Geological Survey, Perth	9
Government of the Commonwealth, Melbourne	5
Intelligence and Tourist Bureau, Adelaide	1
Linnean Society of New South Wales, Sydney	2
Melbourne University	1
National Museum, Melbourne	1
Natural History and Scientific Society, Perth	1
Premier's Office, Perth	1
Public Library, Museum and Art Gallery, Adelaide	1
Queensland Government, Brisbane (gift)	1
Queensland Museum, Brisbane	1
Royal Geographical Society of Australasia, Queensland	1
Royal Society of New South Wales, Sydney	1
Royal Society of Queensland, Brisbane	1
Royal Society of South Australia, Adelaide	18
Royal Zoological Society of New South Wales, Sydney	1

South Australian Ornithological Association, Adelaide	1
Technical Museum, Sydney	1
Victoria National Museum, Melbourne	1
Victorian Government, Melbourne (gift)	1
Western Australian Museum and Art Gallery, Perth	1
AUSTRIA-HUNGARY	
Magyar Nemzeti Museum, Budapest.	1
BORNEO	
Sarawak Museum, Sarawak	1
BRAZIL	
Campinas Centro de Ciencia, Sao Paulo	1
Instituto Agronomico de Estado, Sao Paulo	1
Museo Nacional, Rio de Janeiro	1
Museu Paulista, Sao Paulo	1
BRITISH GUIANA	
Royal Agricultural and Commercial Society, Georgetown	1
CANADA	
Commission of Conservation, Ottawa (gift)	13
Department of Agriculture, Ottawa	14
Department of Agriculture, Regina, Saskatchewan (gift)	1
Department of Agriculture, Victoria, British Columbia	2
Department of the Interior, Geological Survey, Ottawa	32
Department of Lands, Victoria	1
Department of Marine and Fisheries, Ottawa	2
Department of Mines, British Columbia	2
Department of Mines, Ottawa	2
Minister of Education, Toronto	2
Naturaliste Canadien, Chicoutimi	1
Numismatic and Antiquarian Society, Montreal	1
Ottawa Field Naturalists' Club, Ottawa	1
Provincial Museum, Victoria	1
Royal Society, Toronto	3
University of Toronto	4
CEYLON	
Colombo Museum	2
Royal Botanic Garden, Peradeniya	2
CHILE	
Biblioteca Nacional, Santiago de Chile	4
CHINA	
Botanical and Forestry Department, Hong Kong	1
Royal Asiatic Society, North China Branch, Shanghai	1
DENMARK	
Botanical Garden, Copenhagen	3
Naturhistorisk Forening, Copenhagen	1
Société Botanique de Copenhagen	1
EGYPT	
Zoological Gardens, Cairo	1

ENGLAND

Anthropological Institute of Great Britain and Ireland, London	1
Ashmolean Natural History Society of Oxfordshire, Oxford	1
Asiatic Society, London	1
Brighton and Hove Natural History and Philosophical Society	2
Bristol Museum and Art Gallery	1
British Association for the Advancement of Science, London	1
British Museum (Natural History), London	16
Cambridge Antiquarian Society	1
Cambridge Philosophical Society	2
Cambridge University Library	4
City of Sheffield	1
Croydon Natural History and Scientific Society	1
Dove Marine Laboratory, Cullercoats, Northumberland	1
Ealing Scientific and Microscopical Society, London	1
Entomological and Natural History Society, London	1
Great Britain Geological Survey, London	1
Horniman Museum, London	2
Hull Municipal Museum, Hull	3
Imperial Bureau of Entomology, London	2
Imperial College of Science and Technology, London	1
Japan Society, London	1
Lancashire Sea Fisheries Laboratory, Liverpool	1
Linnean Society, London	3
Liverpool Biological Society	1
Liverpool Geological Society	1
Liverpool Marine Biological Station	1
London Zoological Society,	2
Lord Derby Natural History Museum, Liverpool (gift)	1
Manchester Field Naturalists' and Archaeologists' Society	1
Manchester Museum	1
Marine Biological Association of the United Kingdom, Plymouth	1
Oxford Delegates of University Museum	1
Royal Archaeological Institute of Great Britain and Ireland, London	1
Royal Botanic Gardens, Kew	2
Royal Colonial Institute, London	2
Royal Geographical Society, London	3
Royal Horticultural Society, London	2
Royal Society, London	2
Royal Society of Arts, London	2
South London Entomological and Natural History Society, London	1
Tring Zoological Museum	1

FRANCE

Académie des Sciences, Paris	2
Association des Naturalistes, Levallois-Perret	2
Ecole d'Anthropologie, Paris	1
Muséum d'Histoire Naturelle et d'Ethnographie, Havre	1
Société de Géographie, Toulouse	1
Société des Etudes Scientifiques, Angers	2
Société des Sciences Naturelles, La Rochelle	14

Société des Sciences Naturelles des Saône et Loire, Chalon-sur-Saône . . .	2
Société Géologique du Nord, Lille	1
Société Linnéenne de Bordeaux, Bordeaux	1
Société Nationale d'Agriculture, Paris	1
Société Nationale d'Agriculture, Science et Arts, Angers	1
Société Nationale d'Horticulture, Paris	1
Société Zoologique de France, Paris	2

GERMANY

Botanische Staatsinstitute, Hamburg	1
Deutsche Dendrologische Gesellschaft, Bonn-Poppelsdorf	1
Deutsche Gesellschaft für Anthropologie, Ethnologie und Urga., Berlin . . .	1
Deutsche Gesellschaft für Volkstümliche Naturkunde, Berlin	2
Deutscher Seefischerei-Verein, Berlin	1
Deutsches Entomologisches Museum, Berlin	1
Gesellschaft für Erdkunde, Leipzig	1
Institut für Mineralogie und Petrographie, Leipzig	5
Jahres-Verzeichnis der an den Deutschen Univ., Berlin	2
K. Bayer. Ludwig-Maximilians-Universität, Munich	7
K. Bibliothek, Berlin	3
K. Botanischer Garten und Museum, Berlin	3
K. Georg-August-Universität, Göttingen	2
K. Sachs. Gesellschaft der Wissenschaften, Leipzig	1
Universitäts Bibliothek, Kiel	1
Verein für Volkskunde, Berlin	1

INDIA

Agri-Horticultural Society, Madras	1
Anthropological Society, Bombay	1
Archaeological Survey, Burma	1
Archaeological Survey, Calcutta	23
Archaeological Survey, Peshawar	1
Colony of Mauritius,	1
Department of Agriculture, Bombay	1
Department of Agriculture, Madras	2
Department of Agriculture, Pusa	3
Geological Survey, Calcutta	3
Government Museum, Madras	1
Indian Museum, Calcutta	7
Map Record and Issue Office, Calcutta (gift)	1
National Indian Association, Calcutta (gift)	1
Royal Asiatic Society, Straits Branch, Singapore	1
Royal Botanic Garden, Calcutta	1
Superintendent of Government Printing, Calcutta	4

IRELAND

Department of Agriculture, Fisheries Branch, Dublin	2
Royal Dublin Society, Dublin	3
Royal Irish Academy, Dublin	3
Trinity College, Dublin	1

ITALY

American Society, Rome	1
Galleria Sangiorgi, Rome (gift)	1

Musei di Zoologia ed Anatomia Comparata, Turin	1
R. Scuola Superiore d'Agricoltura, Portici	1
Società Geografica Italiana, Rome	2
Società Geologia Italiana, Rome	1
Società Italiana di Antropologia, Florence	1
Società Italiana di Scienze Naturali, Milano	1
Società Romana di Antropologia, Rome	1
Società Toscana di Scienze Naturali, Pisa	1
JAPAN	
Anthropological Society of Tokyo	1
Bureau of Productive Industry Formosa Government, Taihoku	1
Deutsche Gesellschaft für Natur- und Volkerkunde Ostasiens, Tokyo	2
Geological Survey, Tokyo	2
Government-General of Chosen, Seoul, Korea	1
Imperial University of Tokyo, College of Science, Tokyo	2
Tohoku Imperial University, Sendai	1
Tokyo Botanical Society, Tokyo	1
JAVA	
Bataviaasch Genootschap van Kunsten en Wetenschappen, Batavia	4
Department of Agriculture, Buitenzorg	10
Encyclopaedisch Bureau, Batavia	3
Jardin Botanique, Buitenzorg	1
MEXICO	
Sociedad Científica "Antonio Alzate," Mexico	1
NETHERLANDS	
K. Instituut Taal-Land en Volkerkunde Nederlandsch-Indie, 'sGravenhage	1
Museum voor Land-en Volkerkunde, Rotterdam	1
Nederlandsche Dierkundige Vereeniging, Leiden	2
Rijks Ethnographisches Museum, Leiden	2
Stats Bibliotheek, Haarlem	1
NEW ZEALAND	
Acclimatization Society, Wellington	1
Auckland Institute and Museum	1
Department of Agriculture, Wellington	2
Department of Mines, Wellington	1
Dominion Museum, Wellington	1
Minister of Internal Affairs, Department of Education, Wellington (gift)	1
NORWAY	
Bergen Museum	3
PERU	
Cuerpo de Ingenieros de Minas, Lima	1
PORTUGAL	
Academia Real des Sciencias, Lisbon	2
Collegio de S. Fiel, Lisbon	2
RUSSIA	
Imperial Botanical Garden, Petrograd	1
SCOTLAND	
Dumfriesshire and Galloway Natural History and Antiquarian Society, Dumfries	1

Fisheries Board, Edinburgh	3
Royal Scottish Museum, Edinburgh	1
Zoological Society of Scotland, Edinburgh	6

SPAIN

Museo de Ciencias Naturales, Madrid	2
R. Academia de Ciencias, Madrid	1
Sociedad Española de Historia Natural, Madrid	2

SWEDEN

K. Biblioteket, Stockholm	2
K. Svenska Vetenskapsakademien, Stockholm	6
K. Vitt. Hist. och Antik. Akademien, Stockholm	2
Lund Universitets-Biblioteket	2
Statens Skogsförskanstalt, Stockholm	1
Svenska Sällskapet för Antropologi och Geografi, Stockholm	1
Tromsø Museum	2
Uppsala University	1

SWITZERLAND

Botanischer Garten, Universität, Zurich	2
Conservatoire et Jardin Botaniques, Geneva	1
Lausanne University	1
Musée d'Histoire Naturelle, Lausanne	1
Musée Ethnographique Neuchâtel	1
Musée Zoologique, Lausanne	1
Naturforschende Gesellschaft, Basel	2
Naturforschende Gesellschaft, Bern	1
Société des Sciences Naturelles, Fribourg	1
Société Helvétique des Sciences Naturelles, Aarau	1
Universität Bern	10

URUGUAY

Ministerio de Industrias, Montevideo (gift)	1
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WALES

National Museum of Wales, Cardiff	1
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WEST INDIES

Agricultural Experiment Station, Porto Rico	1
Biblioteca Nacional, Havana	1
Department of Agriculture, Kingston	2
Estacion Central Agronomico, Santiago de las Vegas	2
Imperial Department of Agriculture, Barbadoes	2
Jamaica Institute, Kingston	1
Trinidad and Tobago Department of Agriculture, Port of Spain	3
Universidad de la Habana, Havana	2

Bolton, Herbert, Bristol, England	2
Carpenter, G. H., Dublin, Ireland	1
DeCandolle, Casimir, Paris, France	1
Dieterich, Albert, Leipzig, Germany	1
Duncan and Davies, New Plymouth, New Zealand (gift)	1
Ewart, A. J., Melbourne, Australia	7
Gilchrist, Douglas A., Newcastle-upon-Tyne, England	1

Guppy, H. B., Kew, England (gift)	1
Gurney, J. H., Norfolk, England	3
Hartland, E. Sydney, Gloucester, England	1
Lahille, F., Buenos Aires, Argentina	7
Levy-Bruhl, L., Paris, France	2
Marquez, Alberto, Parahyba, Brazil (gift)	1
Niederlein, D. Gustav, Zittau, Germany (gift)	1
Outes, Felix T., Buenos Aires, Argentina	1
Sapir, Edward, Ottawa, Canada	3
Schlagenhaufen, Otto, Zürich, Switzerland	1
Torres, Luis Maria, La Plata, Argentina.	2
Tristan, J. F., San José, Costa Rica (gift)	1
Weigel, O., Leipzig, Germany	2
Wille, N., Christiania, Norway	2
Yamawaki, H., Japan (gift)	3
Zimmer, George F., London, England	1

ARTICLES OF INCORPORATION

STATE OF ILLINOIS.

DEPARTMENT OF STATE.

WILLIAM H. HINRICHSSEN, *Secretary of State.*

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

Whereas, a Certificate duly signed and acknowledged having been filed in the office of the Secretary of State, on the 16th day of September, A. D. 1893, for the organization of the COLUMBIAN MUSEUM OF CHICAGO, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereto attached.

Now, therefore, I, William H. Hinrichsen, Secretary of State of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said COLUMBIAN MUSEUM OF CHICAGO is a legally organized Corporation under the laws of this State.

In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of the State. Done at the City of Springfield, this 16th day of September, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the United States the one hundred and eighteenth.

W. H. HINRICHSSEN,
Secretary of State.

[SEAL.]

TO HON. WILLIAM H. HINRICHSSEN,

SECRETARY OF STATE:

SIR:

We, the undersigned citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and that for the purposes of such organization we hereby state as follows, to wit:

1. The name of such corporation is the "COLUMBIAN MUSEUM OF CHICAGO."
2. The object for which it is formed is for the accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating Art, Archaeology, Science, and History.
3. The management of the aforesaid Museum shall be vested in a Board of FIFTEEN (15) TRUSTEES, five of whom are to be elected every year.
4. The following named persons are hereby selected as the Trustees for the first year of its corporate existence:

Ed. E. Ayer, Charles B. Farwell, George E. Adams, George R. Davis, Charles L. Hutchinson, Daniel H. Burnham, John A. Roche, M. C. Bullock, Emil G. Hirsch, James W. Ellsworth, Allison V. Armour, O. F. Aldis, Edwin Walker, John C. Black, and Frank W. Gunsaulus.

5. The location of the Museum is in the City of Chicago, County of Cook, and State of Illinois.

(Signed),

George E. Adams, C. B. Farwell, Sidney C. Eastman, F. W. Putnam, Robert McMurdy, Andrew Peterson, L. J. Gage, Charles L. Hutchinson, Ebenezer Buckingham, Andrew McNally, Edward E. Ayer, John M. Clark, Herman H. Kohlsaat, George Schneider, Henry H. Getty, William R. Harper, Franklin H. Head, E. G. Keith, J. Irving Pearce, Azel F. Hatch, Henry Wade Rogers, Thomas B. Bryan, L. Z. Leiter, A. C. Bartlett, A. A. Sprague, A. C. McClurg, James W. Scott, George F. Bissell, John R. Walsh, Chas. Fitzsimons, John A. Roche, E. B. McCagg, Owen F. Aldis, Ferdinand W. Peck, James H. Dole, Joseph Stockton, Edward B. Butler, John McConnell, R. A. Waller, H. C. Chatfield-Taylor, A. Crawford, Wm. Sooy Smith, P. S. Peterson, John C. Black, Jno. J. Mitchell, C. F. Gunther, George R. Davis, Stephen A. Forbes, Robert W. Patterson, Jr., M. C. Bullock, Edwin Walker, George M. Pullman, William E. Curtis, James W. Ellsworth, William E. Hale, Wm. T. Baker, Martin A. Ryerson, Huntington W. Jackson, N. B. Ream, Norman Williams, Melville E. Stone, Bryan Lathrop, Eliphalet W. Blatchford, Philip D. Armour.

STATE OF ILLINOIS } ss.
COOK COUNTY }

I, G. R. MITCHELL, a NOTARY PUBLIC in and for said County, do hereby certify that the foregoing petitioners personally appeared before me and acknowledged severally that they signed the foregoing petition as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this 14th day of September, 1893.

G. R. MITCHELL,

[SEAL.]

NOTARY PUBLIC, COOK COUNTY, ILL.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the Corporate members held the 25th day of June, 1894, the name of the COLUMBIAN MUSEUM was changed to FIELD COLUMBIAN MUSEUM. A certificate to this effect was filed June 26, 1894, in the office of the Secretary of State for Illinois.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the Corporate members held the 8th day of November, 1905, the name of the FIELD COLUMBIAN MUSEUM was changed to FIELD MUSEUM OF NATURAL HISTORY. A certificate to this effect was filed November 10, 1905, in the office of the Secretary of State for Illinois.

AMENDED BY-LAWS.

(FEBRUARY 10, 1913.)

ARTICLE I.

MEMBERS.

SECTION 1. Members shall be of five classes, Annual Members, Corporate Members, Life Members, Patrons and Honorary Members.

SEC. 2. Annual Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of ten dollars (\$10.00), payable within thirty days after notice of election, and within thirty days after each recurring annual date. The failure of any person to make such initiatory payment and such annual payments within said time shall, at the option of the Board of Trustees, be sufficient grounds for the forfeiture of an annual membership.

This said annual membership shall entitle the member to:

First.— Free admittance for the member and family, to the Museum on any day.

Second.— Ten tickets every year, admitting the bearer to the Museum on pay days.

Third.— A copy of all publications of the Museum when requested.

Fourth.— Invitations to all special exhibits, receptions, lectures, or other functions which may be given at the Museum.

SEC. 3. The Corporate Members shall consist of the persons named in the articles of incorporation, and of such other persons as shall be chosen from time to time by the Board of Trustees at any of its meetings, upon the recommendation of the Executive Committee; provided, that such persons named in the articles of incorporation shall, within ninety days from the adoption of these By-Laws, and persons hereafter chosen as Corporate Members shall, within ninety days of their election, pay into the treasury the sum of twenty dollars (\$20.00) or more. The failure of any person to make such payment within said time shall, at the option of the Board of Trustees, be ground for forfeiture of his corporate membership. Corporate Members becoming Life Members, Patrons or Honorary Members shall be exempt from dues. Annual meetings of said Corporate Members shall be held at the same place and on the same day that the annual meeting of the Board of Trustees is held.

SEC. 4. Any person paying into the treasury the sum of five hundred dollars (\$500.00), at any one time, shall, upon the unanimous vote of the Board, become a Life Member. Life Members shall be exempt from all dues.

SEC. 5. Patrons shall be chosen by the Board upon recommendation of the Executive Committee from among persons who have rendered eminent service to the Museum. They shall be exempt from all dues, and, by virtue of their election as Patrons, shall also be Corporate Members.

SEC. 6. Honorary Members shall be chosen by the Board from among persons who have rendered eminent service to science, and only upon unanimous nomination of the Executive Committee. They shall be exempt from all dues.

ARTICLE II.

BOARD OF TRUSTEES.

SECTION 1. The Board of Trustees shall consist of fifteen members. The respective members of the Board now in office, and those who shall hereafter be elected, shall hold office during life. Vacancies occurring in the Board shall be filled at a regular meeting of the Board, upon the nomination of the Executive Committee made at a preceding regular meeting, by a majority vote of the members of the Board present.

SEC. 2. Regular meetings of the Board shall be held on the second Monday of each month. Special meetings may be called at any time by the President, and shall be called by the Secretary upon the written request of three Trustees. Five Trustees shall constitute a quorum, except for the election of officers or the adoption of the Annual Budget, when seven Trustees shall be required, but meetings may be adjourned by any less number from day to day, or to a day fixed, previous to the next regular meeting.

SEC. 3. Reasonable written notice, designating the time and place of holding meetings, shall be given by the Secretary.

ARTICLE III.

HONORARY TRUSTEES.

SECTION 1. As a mark of respect, and in appreciation of services performed for the Institution, those Trustees who by reason of inability, on account of change of residence, or for other cause, or from indisposition to serve longer in such capacity, shall resign their place upon the Board, may be elected, by a majority of those present at any regular meeting of the Board, an Honorary Trustee for life. Such Honorary Trustee will receive notice of all meetings of the Board of Trustees, whether regular or special, and will be expected to be present at all such meetings and participate in the deliberations thereof, but an Honorary Trustee shall not have the right to vote.

ARTICLE IV.

OFFICERS.

SECTION 1. The officers shall be a President, a First Vice-President, a Second Vice-President, a Secretary, an Assistant Secretary, and a Treasurer. They shall be chosen by ballot by the Board of Trustees, a majority of those present and voting being necessary to elect. The President, the First Vice-President, and the Second Vice-President shall be chosen from among the members of the Board of Trustees. The meeting for the election of officers shall be held on the second Monday of January of each year, and shall be called the Annual Meeting.

SEC. 2. The officers shall hold office for one year, or until their successors are elected and qualified, but any officer may be removed at any regular meeting of the Board of Trustees by a vote of two-thirds of all the members of the Board. Vacancies in any office may be filled by the Board at any meeting.

SEC. 3. The officers shall perform such duties as ordinarily appertain to their respective offices, and such as shall be prescribed by the By-Laws, or designated from time to time by the Board of Trustees.

ARTICLE V.**THE TREASURER.**

SECTION 1. The Treasurer shall be custodian of the funds of the Corporation, except as hereinafter provided. He shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents. But no warrants shall be issued, except in conformity with a regularly prepared voucher, giving the name of the payee and stating the occasion for the expenditure, and verified and approved as hereinafter prescribed. It shall be no part of the duties of the Treasurer to see that the warrants have been issued in conformity with such vouchers.

Sec. 2. The securities and muniments of title belonging to the corporation shall be placed in the custody of some Trust Company of Chicago to be designated by the Board of Trustees, which Trust Company shall collect the income and principal of said securities as the same become due, and pay same to the Treasurer, except as hereinafter provided. Said Trust Company shall allow access to and deliver any or all securities or muniments of title to the joint order of the following officers, namely: The President or one of the Vice-Presidents, jointly with the Chairman, or one of the Vice-Chairmen, of the Finance Committee of the Museum.

Sec. 3. The Treasurer shall give bond in such amount, and with such sureties, as shall be approved by the Board of Trustees.

Sec. 4. All vouchers executed for the payment of liabilities incurred in the administration of the Museum, shall be verified by the Auditor, and approved for payment by the Director, and the Chairman of the Administration Committee. All vouchers executed for expenditures for the construction or reconstruction of the Museum building, or buildings, shall be verified by the Auditor and approved for payment by the Chairman of the Building Committee. All vouchers executed in connection with the investments of the Corporation, or in any way having to do with the endowment funds of the Corporation, shall be verified by the Auditor and approved for payment by the Chairman of the Finance Committee.

Sec. 5. The Harris Trust and Savings Bank of Chicago shall be Custodian of "The N. W. Harris Public School Extension of Field Museum" fund. The Bank shall make disbursements only upon warrants drawn by the Curator of "The N. W. Harris Public School Extension of Field Museum of Natural History" and countersigned by the Auditor of Field Museum of Natural History. In the absence or inability of the said officers, warrants may be signed by such officers as shall be authorized by special resolution of the Board of Trustees of Field Museum of Natural History. But no warrant shall be issued, except in conformity with a regularly prepared voucher, giving the name of the payee and stating the occasion for the expenditure, and verified and approved by the officers above designated. It shall be no part of the duties of the Bank to see that the warrants have been issued in conformity with such vouchers.

ARTICLE VI.**THE DIRECTOR.**

SECTION 1. The Board of Trustees shall elect a Director of the Museum, who shall remain in office until his successor shall be elected. He shall have immediate charge and supervision of the Museum, and shall control the operations of the insti-

tution, subject to the authority of the Board of Trustees and its Committees. The Director shall be the official medium of communication between the Board, or its Committees, and the scientific staff and maintenance force.

SEC. 2. There shall be four scientific departments of the Museum — Anthropology, Botany, Geology, and Zoölogy, each under the charge of a Curator, subject to the authority of the Director. The Curators shall be appointed by the Board upon the recommendation of the Director, and shall serve during the pleasure of the Board. Subordinate staff officers in the scientific departments shall be appointed and removed by the Director upon the recommendation of the Curators of the respective Departments. The Director shall have authority to employ and remove all other employees of the Museum.

SEC. 3. The Director shall make report to the Board at each regular meeting, recounting the operations of the Museum for the previous month. At the Annual Meeting, the Director shall make an Annual Report, reviewing the work of the Museum for the previous year, which Annual Report shall be published in pamphlet form for the information of the Trustees and Members, and for free distribution in such number as the Board may direct.

ARTICLE VII.

AUDITOR.

SECTION 1. The Board shall appoint an Auditor, who shall hold his office during the pleasure of the Board. He shall keep proper books of account, setting forth the financial condition and transactions of the Corporation, and of the Museum, and report thereon at each regular meeting, and at such other times as may be required by the Board. He shall certify to the correctness of all vouchers for the expenditure of the money of the corporation.

ARTICLE VIII.

COMMITTEES.

SECTION 1. There shall be five Committees as follows: Finance, Building, Auditing, Administration, and Executive.

SEC. 2. The Finance and Auditing Committees shall each consist of three members, and the Building and Administration Committees shall each consist of five members. All members of these four Committees shall be elected by ballot by the Board at the Annual Meeting, and shall hold office for one year, and until their successors are elected and qualified. In electing the members of these Committees, the Board shall designate the Chairman and Vice-Chairman by the order in which the members are named in the respective Committee; the first member named shall be Chairman, the second named the Vice-Chairman, and the third named, Second Vice-Chairman, succession to the Chairmanship being in this order in the event of the absence or disability of the Chairman.

SEC. 3. The Executive Committee shall consist of the President of the Board the Chairman of the Finance Committee, the Chairman of the Building Committee, the Chairman of the Administration Committee, the Chairman of the Auditing Committee, and two other members of the Board to be elected by ballot at the Annual Meeting.

SEC. 4. Four members shall constitute a quorum of the Executive Committee; three members shall constitute a quorum of the Administration Committee, and in all other standing Committees, two members shall constitute a quorum. In the

event that, owing to the absence or inability of members, a quorum of the regularly elected members cannot be present at any meeting of any Committee, then the Chairman thereof, or his successor, as herein provided, may summon any member of the Board of Trustees to act in place of the absentee.

SAC. 5. The Finance Committee shall have supervision of investing the endowment and other permanent funds of the Corporation, and the care of such real estate as may become its property. It shall have authority to invest, sell, and reinvest funds, subject to the approval of the Board.

SAC. 6. The Building Committee shall have supervision of the construction, reconstruction, and extension of any and all buildings used for Museum purposes.

SAC. 7. The Executive Committee shall be called together from time to time as the Chairman may consider necessary, or as he may be requested to do by three members of the Committee, to act upon such matters affecting the administration of the Museum as cannot await consideration at the Regular Monthly Meetings of the Board of Trustees. It shall, before the beginning of each fiscal year, prepare and submit to the Board an itemized Budget, setting forth the probable receipts from all sources for the ensuing year, and make recommendations as to the expenditures which should be made for routine maintenance and fixed charges. Upon the adoption of the Budget by the Board, the respective Committees shall be considered as authorized to make the expenditures detailed therein. No increase in the expenditures under any items of the Budget shall be made, except by authority of the Board of Trustees, but the Executive Committee shall have authority, in cases of emergency, to expend a further total sum not exceeding two thousand dollars in any one month.

SAC. 8. The Administration Committee shall have general supervision of the affairs of the Museum. The Committee shall hold one meeting each month with the Director at the Museum within a week preceding each Monthly Meeting of the Board of Trustees.

SAC. 9. The Auditing Committee shall have supervision over all accounting and bookkeeping, and full control of the financial records. It shall cause the same, once each year, or oftener, to be examined by an expert individual or firm, and shall transmit the report of such expert individual or firm to the Board at the next ensuing regular meeting after such examination shall have taken place.

SAC. 10. The Chairman of each Committee shall report the acts and proceedings thereof at the next ensuing regular meeting of the Board.

SAC. 11. The President shall be ex-officio a member of all Committees and Chairman of the Executive Committee. Vacancies occurring in any Committee may be filled by ballot at any regular meeting of the Board.

ARTICLE IX.

NOMINATING COMMITTEE.

SECTION 1. At the November meeting of the Board, each year a Nominating Committee of three shall be chosen by lot. Said Committee shall make nominations for membership of the Finance Committee, the Building Committee, the Administration Committee, and the Auditing Committee, and for two members of the Executive Committee, from among the Trustees, to be submitted at the ensuing December meeting and voted upon at the following Annual Meeting in January.

ARTICLE X.

SECTION 1. Whenever the word "Museum" is employed in the By-Laws of the Corporation, it shall be taken to mean the building in which the Museum as an Institution is located and operated, the material exhibited, the material in study collections, or in storage, furniture, fixtures, cases, tools, records, books, and all appurtenances of the Institution, and the workings, researches, installations, expenditures, field work, laboratories, library publications, lecture courses, and all scientific and maintenance activities.

SEC. 2. These By-Laws may be amended at any regular meeting of the Board of Trustees by a two-thirds vote of all the members present, provided the amendment shall have been proposed at a preceding regular meeting.

HONORARY MEMBERS.

EDWARD B. AYER
HARLOW N. HIGINBOTHAM
CHARLES B. CORY

STANLEY McCORMICK
MRS. TIMOTHY B. BLACKSTONE
NORMAN W. HARRIS

DECEASED.

ROBERT F. CUMMINGS
GEORGE M. PULLMAN
MARY D. STURGES

PATRONS.

ALLISON V. ARMOUR
EDWARD B. BUTLER
ALBERT M. COLLINS
LEE GARNET DAY
ERNEST R. GRAHAM
NORMAN W. HARRIS
CHARLES L. HUTCHINSON

VERNON SHAW KENNEDY
GEORGE MANIERRE
CHARLES H. MARKHAM
JOHN S. MILLER
JOHN BARTON PAYNE
FREDERICK J. V. SKIFF
WILLARD A. SMITH

DECEASED.

DANIEL H. BURNHAM
JOSEPH N. FIELD

FREDERICK W. PUTNAM
WILLIAM I. BUCHANAN
EDWIN WALKER

CORPORATE MEMBERS.

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MULLIKEN, A. H.

NATHAN, ADOLPH
NOLAN, JOHN H.
NORTON, O. W.

ORB, JOHN A.
OSBORN, HENRY A.

PALMER, PERCIVAL B.
 PARKER, FRANCIS W.
 PEARSON, EUGENE H.
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DECEASED.

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 CORWITH, CHARLES R.

CUDAHY, JOHN
 GREY, WILLIAM L.
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FIELD MUSEUM OF NATURAL HISTORY.

PUBLICATION 194.

REPORT SERIES.

VOL. V, No

ANNUAL REPORT OF THE DIRECTOR

TO THE
BOARD OF TRUSTEES

FOR THE YEAR 1916.



CHICAGO, U. S. A.

January, 1917.

APR 4 1917

FIELD MUSEUM OF NATURAL HISTORY.

PUBLICATION 194.

REPORT SERIES.

VOL. V, No. 2.

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CHICAGO, U. S. A.

January, 1917.

CONTENTS

	PAGE
Board of Trustees	76
Officers and Committees	77
Staff of the Museum	78
Report of the Director	79
Maintenance	82
Publications	82
Mailing List	83
Library	84
Cataloguing, Inventorying, and Labeling	86
Accessions	87
Expeditions and Field Work	96
Installation and Permanent Improvement	97
The N. W. Harris Public School Extension	105
Photography and Illustration	106
Printing	107
Financial Statement	108
Attendance and Receipts	110
Accessions	
Department of Anthropology	111
Department of Botany	112
Department of Geology	114
Department of Zoology	117
Section of Photography	119
The Library	120
Articles of Incorporation	133
Amended By-Laws	135
List of Honorary Members and Patrons	141
List of Corporate Members	142
List of Life Members	143
List of Annual Members	145

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ALBERT B. LEWIS, *Assistant Curator of African and Melanesian
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FAY COOPER COLE, *Assistant Curator Physical Anthropology
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J. ALDEN MASON, *Assistant Curator of Mexican and South
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ELMER S. RIGGS, *Assistant Curator of Paleontology.*

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CARL L. HUBBS, *Assistant Curator Division of Ichthyology and
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S. C. SIMMS, *Curator.*

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D. C. DAVIES.

ASSISTANT RECORDER.

BENJ. BRIDGE

THE LIBRARY.

ELSIE LIPPINCOTT, *Librarian.*

EMILY M. WILCOXSON, *Assistant Librarian.*

January 1, 1917.

ANNUAL REPORT OF THE DIRECTOR.

1916

To the Trustees of Field Museum of Natural History:

I have the honor to present a report of the operations of the Museum for the year ending December 31, 1916.

The year has been profitable in accessions of material notwithstanding there have been no expeditions or field work except of a local and unimportant character. More or less confusion is observable throughout the Museum by reason of the prosecution of the large work of installing new material and re-installing old material and selecting material from storage for display, all occasioned by the labor constantly going on in preparation for the exhibition halls of the new Museum building. In fact, the justifiable pride taken in the orderly, systematic and classified arrangement of the public courts and halls of the Museum is rapidly disappearing in the face of the over-crowded condition and shifting about of cases in preparation necessary to the consummation of the ambitious plans of the occupation of the new Grant Park structure.

Mr. George F. Porter, Trustee, has resigned his place upon the Board because of his intended protracted absence from the city. The vacancy has been filled by the election of Mr. Henry Field, second grandson of Mr. Marshall Field, the founder of the Institution.

There have been no retirements from the scientific staff during the year. Dr. J. Alden Mason, of the University of California, has accepted the position of Assistant Curator in Mexican and South American Archaeology, and has entered upon his duties. An appointment to the Assistant Curatorship of the Division of North American Ethnology, authorized by the Board of Trustees, has not been decided upon. Mr. Carl L. Hubbs, of the Leland Stanford Junior University, has accepted the position of Assistant Curator of Ichthyology and Herpetology and will commence his duties early in 1917. Both of these appointments are from the younger school of their respective sciences, but come to the Museum with the very highest endorsement and with the promise of a useful career in the Institution.

Mr. Stanley Field having assumed the cost of restoring and maintaining the activity of the Section of Plant Reproduction in the Depart-

ment of Botany, discontinued three years ago, the Museum has been so fortunate as to again secure the services of Dr. B. E. Dahlgren as an Assistant Curator in charge of this work, which he will resume with competent assistants within the next month. Work on the shops and studios required for this section has already commenced.

The death of Mr. Norman Wait Harris, founder of the N. W. Harris Public School Extension of Field Museum, must be announced. The Board of Trustees at a meeting held August 14th unanimously adopted the following:

"The death of Norman Wait Harris has closed a life whose success and whose deeds were based upon and actuated by steadfast Christian principles and an unswerving faith in human character. His wealth was amassed by investments in public and private obligations undertaken for the development and betterment of civic conditions and public education.

"No man of business in these or other times has been more scrupulous in his methods, more honorable in his dealings, or more just in measuring the rights and privileges of individuals or communities. All his manifold transactions, his endowments and gifts to religious, benevolent and educational causes, exemplify a purpose to dedicate these benefactions so as to uplift humanity, and push it forward not alone for its material good but for its spiritual welfare.

"He was a philosopher in philanthropy as he was in finance. The honor and respect so generally shown him in life will be accorded his name by all classes for generations.

"In expressing this appreciation of the life and character of Mr. Harris, the Board of Trustees of Field Museum of Natural History, which Institution has been the grateful object of his wise and humane generosity, desire especially to record their conviction that in no direction in which Mr. Harris has selected a means of manifesting his interest in men and their children, will larger, deeper or more lasting good have been done than by the endowment of The N. W. Harris Public School Extension of Field Museum of Natural History.

"The Board of Trustees of Field Museum of Natural History, having unanimously adopted the foregoing, do instruct that the same be spread upon the records of the Board and request the President to cause the same to be properly engrossed and attested and presented to the family of the late Norman Wait Harris.

The progress of the Harris Extension to the Public Schools is referred to in another part of this report, but the impressive fact that over 250,000 public school children are now included in the service of this Extension is a matter for special mention.

Mr. Stanley Field, President of the Museum, has during the year provided the funds for the establishment of a Pension System in behalf of the employees of the Museum whose compensation is not above a

certain annual sum. This act, affording such striking evidence of Mr. Field's interest in the work of the Museum and sympathy for those who are performing it, has brought to the employes a comforting assurance of the future, which not only spreads contentment and relief throughout the Institution, but must add to the efficiency of the work of its beneficiaries.

The assumption by Mr. Edward E. Ayer of the cost of supplying to the Ayer Ornithological Library any desirable publications not now contained in the library, or which may hereafter be published, was announced during the year — a provision for the future of this important section of the Museum Library which can hardly be over-estimated.

Another gift from the membership of the Board of Trustees is that of Mr. Arthur B. Jones, who assumes the cost of securing and installing a group of six North American buffalo with landscape painting and accessories. This gift which enables the Museum to present in the best form known to the art of modern taxidermy this familiar but practically extinct and exclusively North American mammal in different ages and sex, is a most highly valued contribution to the exhibition halls of the Department of Zoölogy.

During the year the material procured at the San Francisco Exposition has arrived at the Museum and altogether constitutes a very valuable acquisition to all the departments of the Museum. The Chinese pagodas are now installed in eleven cases. The Chinese gateway has been erected in the main dome court, while the minerals and birds and models and other items, all most desirable, have been cared for in the proper departments.

At a meeting of the Board of Trustees held December 11th, by unanimous vote permission was asked of Mr. Stanley Field to name one of the exhibition halls of the new Museum building in his honor, requesting him to select a hall. Mr. Field has since announced his preference for the Hall of Mammals.

A most noteworthy gift to the Museum during the past year has been the private herbarium of the late Elihu Hall, consisting of approximately 35,000 specimens, presented by the heirs of Mr. Hall. This extends the plant collection in the Museum to most gratifying proportions and adds much new material of unusual interest and worth.

Dr. Frank W. Gunsaulus has presented the Museum with his remarkable collection of Japanese sword guards, a collection which has attracted much interest and comment while being on exhibition at the Chicago University. Accompanying this most unique and almost priceless collection, were a number of rare and costly volumes of Japanese

Art. The Board of Trustees elected Mr. Gunsaulus a Patron in recognition of the eminent services he has rendered the Institution.

Mr. Homer E. Sargent was also elected a Patron for similar reasons.

Mr. Marshall Field has presented the Board of Trustees of the Museum with an oil portrait of the Founder of the Museum, painted by Bonnat. It is to be placed on the wall in the Trustees' Room of the new Museum.

As a result of the personal efforts of President Stanley Field, the Board of Trustees has had the pleasure of electing fifty-two Life Members during the past few months. This is a most remarkable manifestation of the growing interest of the citizens of Chicago in the Institution, which far outweighs in importance even the very considerable sum of money thus added to the resources of the Museum.

The contract for the filling in of the large area of ground, whose natural elevation was some thirty feet below the floor of the basement of the new Museum building, is practically finished; in fact, would have been accomplished except for weather conditions. This completes what might be called the foundation work of the building and it is expected that the placing of the steel and the setting of the marble will begin as early in the spring as the prevailing temperature will permit. The main water line has been finished to the building. The big sewer duct has also been laid to the building line. The marble is cut and three-fourths of it is stored in the city, the balance being at the quarries subject to requisition. The structural steel has all been delivered to the site.

MAINTENANCE.—The budget authorized by the Board of Trustees provided the sum of \$156,796 for the maintenance of the Museum for the year ending December 31, 1916. The amount expended was \$136,280, showing a balance in excess of the estimated expenses of \$20,516. In addition to this amount approximately \$11,000 was expended by authority of the Board of Trustees for collections, expeditions, etc., bringing the total expenditure for the year to \$147,280.

PUBLICATIONS.—During the year five publications and two indexes have been issued. These publications comprise five volumes, details of which follow:

Pub. 186.—Report Series. Vol. V, No. 1. Annual report of the Director to the Board of Trustees for the year 1915. 74 pages. 14 half-tones. Edition 2500.

Pub. 187.—Botanical Series. Vol. II, No. 11. 1. Contributions to North American Euphorbiaceæ VI–11. Vegetation of Alacran Reef. By C. F. Millspaugh. 32 pages. 2 half-tones. Edition 1500.

- Pub. 188.—Geological Series. Vol. III, No. 10. Catalogue of the Collection of Meteorites. By O. C. Farrington. 82 pages. 4 half-tones. Edition 1500.
- Pub. 189.—Zoölogical Series. Vol. X, No. 14. Mammals of the Collins-Day South American Expedition. By W. H. Osgood. 18 pages. 2 half-tones. Edition 1500.
- Pub. 190.—Ornithological Series. Vol. I, No. 10. Descriptions of apparently new South American Birds, with notes on some Little Known Species. By C. B. Cory. 10 pages. Edition 1500.

These publications have been distributed to all names on the mailing list both in domestic and foreign countries with the exception of those foreign countries where service has been temporarily discontinued by the Bureau of International Exchanges. If a prompt acknowledgment of these publications may be taken as an evidence of appreciation, it has been noted that practically all of the acknowledgment cards have been signed and returned. With the increasing number of publications issued and the increasing demand, especially for the earlier numbers, it has been found advisable to take an inventory of the stock actually on hand. An inventory of the half-tones has also been taken.

NAMES ON MAILING LIST

Domestic	599
Foreign	671
	<hr/>
	1,260

DISTRIBUTION OF FOREIGN EXCHANGES

Africa	20	Italy	37
Australia	31	Japan	10
Borneo	1	Java	4
Canada	26	Mexico	19
Central America	7	New Zealand	6
China	3	Norway	8
Denmark	8	Portugal	5
France	54	South America	30
Great Britain	107	Spain	7
Greece	1	Sweden	14
Holland	20	Switzerland	23
India	17	West Indies	8

DISTRIBUTION OF DOMESTIC EXCHANGES

Alabama	2	Delaware	2
Arkansas	1	District of Columbia	62
California	27	Florida	4
Colorado	10	Idaho	2
Connecticut	21	Illinois	65

84 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

DISTRIBUTION OF DOMESTIC EXCHANGES

Indiana	16	North Dakota	2
Iowa	13	Ohio	20
Kansas	6	Oklahoma	3
Kentucky	3	Oregon	1
Louisiana	5	Pennsylvania	35
Maine	7	Rhode Island	4
Maryland	9	South Carolina	2
Massachusetts	64	South Dakota	2
Michigan	12	Tennessee	2
Minnesota	8	Texas	3
Mississippi	3	Utah	1
Missouri	14	Vermont	4
Montana	2	Virginia	4
Nebraska	6	Washington	7
Nevada	2	West Virginia	5
New Hampshire	2	Wisconsin	16
New Jersey	13	Wyoming	2
New Mexico	3	Cuba	3
New York	80	Hawaii	5
North Carolina	6	Philippine Islands	3
		Porto Rico	1

THE LIBRARY.— The accessions of the Library for the year are fourteen hundred books and pamphlets, bringing the total number in the library to 69,675, distributed as follows:

General Library	44,928
Department of Anthropology	3,436
Department of Botany	7,072
Department of Geology	9,868
Department of Zoology	4,371

The decrease in the number of accessions is largely due to the existing conditions abroad that continue to affect the receipts from contemporary institutions and societies. It is surprising that so many continue to send their publications as regularly as they have, as will be noted by the list of accessions. A most satisfactory feature of the year's work is the acknowledgment of the gifts from friends of the Museum, which include rare and out of print works of an unusually helpful and valuable nature. This is particularly true of the collection of Japanese works presented by Dr. Frank W. Gunsaulus that were indispensable in the installation of the Japanese material given to the Museum by Dr. Gunsaulus, and will be for all time valuable to the students of Japanese art. Among these works are: Audsley's Ornamental Arts of Japan; Bing's Artistic Japan; Dresser's Japan; Gonse's L'Art Japonais; Joly's Sword Mounts and Joly's Sword Fittings;

Tomkinson's Japanese Collection; Jacoby's Japanische Schwertzieraten. Mr. Edward E. Ayer presented copies of Nelson's Birds of Yorkshire and Dixon's Game Birds. Mr. Ayer has also caused to be ordered for the Museum a collection of ornithological works, which when secured, will further enrich the Edward E. Ayer Ornithological Library. The students and artists, as they become acquainted with the resources of the Museum Library, find it the only library in the city containing so many rare and beautifully illustrated ornithological works. Mrs. Edward E. Ayer presented a copy of her translation of the Memorial of Fray Alonso Benavides, 1630. The Cambridge University, England, sent a set of sixteen volumes of its Archaeological and Ethnological publications. From the Instituto Biologico of Mexico was received eight of the earlier volumes of *La Naturaleza*. The Canadian Institute sent fifteen of its earliest publications. The Deutsche Morgenländische Gesellschaft, Leipzig, presented twenty-three volumes of its *Zeitschrift*. The Academy of Arts and Sciences, Boston, completed its file of Proceedings of fifty-one volumes to date, by sending volumes one to twenty-eight inclusive. Through the generosity of various governments represented at the Panama-Pacific International Exposition, the library received a hundred books and pamphlets. Among these contributions was that of the Chinese Commission consisting of a work in sixteen volumes, bound in cloth cases, entitled *K'in ting shu king t'u shuo*, issued by the command of the late Empress Dowager in 1903, and now out of print. The Argentine Commission gave twenty-eight volumes, among which is a set of the *Boletin* of the Cordoba Academy of Natural Sciences, particularly desirable. The purchases have been confined to a limited number of books required by the staff for immediate use. Of the twelve orders approved, eleven were filled and these added thirty-five works to the Departmental libraries. Through exchanges with foreign book dealers for publications issued by the Museum, thirteen other important volumes desired by the staff were obtained.

Year after year the periodical lists are examined by the Curators and those periodicals that were supposed to have permanent value when subscribed to but have become of less use to the staff, have been dropped from the list. At the present time ninety-eight periodicals are received with twenty continuations.

The increased cost of materials used in binderies is reflected in the advance in the schedule of prices for binding, leather binding being almost prohibitive. For several years, however, all books except a few sets in continuation have been bound in cloth or library buckram in preference to leather as more durable bindings. During the year six hundred and thirteen books and pamphlets have been bound.

The activities which have to do with the receiving, checking, recording, cataloguing, classifying, labeling, counting, and binding — the process through which a book must pass before it may be properly placed on the shelf — has continued as in past years. The smaller number of accessions has permitted a continuance of the analytical work that further enhances the value of the library. There have been newly written, revised, and rewritten 20,560 cards.

DEPARTMENTAL CATALOGUING, INVENTORYING, AND LABELING.— The work of cataloguing in the Department of Anthropology has been continued as usual during the current year, the number of catalogue cards written by the various members of the staff totaling 2,036. These cards are distributed among the divisions as follows: North American Ethnology and Archæology 178; South American and Mexican Ethnology and Archæology 169; Melanesian Ethnology 199; Philippine and African Ethnology 139; Gunsaulus collection of Japanese sword-guards 926; Tibetan Ethnology 242; Chinese Archæology and Ethnology 181; Indian Archæology 2. These cards have been entered in the inventory books of the Department, which now number 38. The annual accessions amount to 29, all of which have been entered. The total number of cards entered beginning from the first volume is 141,552. The Section of Printing has supplied 4,533 labels to the Department during the year. These are distributed over the divisions as follows: American Archæology 235; Chinese Archæology 277; African Ethnology 2,167; Melanesian Ethnology 1,854. The Section of Photography has provided the Department with 232 negatives, 146 prints and 18 lantern slides. The prints were duly classified and added to the departmental albums. An additional number of 436 cards were prepared for the catalogue of lantern slides, the inauguration of which was reported last year. To the label file were added 875 new label cards.

All prepared and organized material received by the Department of Botany during the year has been catalogued to date. 20,292 entries have been made, making the total number of entries 453,083. Of the Hall herbarium 14,149 specimens have been prepared, mounted, and catalogued for insertion in the general herbarium of the Museum.

The cataloguing in the Department of Geology has kept pace with accessions and all specimens in the department are fully recorded. The largest number of entries made was of economic specimens, a total of 1,302 new entries having been made in this division. These with additional entries give a total number for the year of 1,989, and a total number for the department of 134,700. The number of cards written during the year was 78. The labels written number 1,047. About

200 of these labels were handwritten with white ink on black cardboard to serve as temporary labels until printed ones could be secured; the remainder were from the Section of Printing. Most of the labels were for newly installed economic specimens. A total of 722 printed labels has been received during the year, the larger part being for the meteorite collection. These have all been installed with the corresponding specimens. There remains in the hands of the printer, copy for 1,143 labels.

In the Department of Zoölogy the cataloguing and labeling of the South American birds received from Museum expeditions has been continued during the year. A regional catalogue of South American mammals was prepared in the form of an index of about 650 cards. A total of 1,105 labels were installed as follows: 36 labels for mounted fishes; 2 for the Moose group; 2 for the osteological exhibit; 1 for South American bird group; 55 for mounted birds and 1,009 for the shell collection. The entries made during the year number 1,817, of which 1,663 were for ornithology and 154 for mammalogy.

The following table shows the work performed on catalogues and the inventorying accomplished:

	No. of Record Books	Total No. of entries to Dec. 31, 1916	Entries During 1916	Total No. of Cards Written
Department of Anthropology	38	143,338	2,036	141,552
Department of Botany	57	453,083	20,292	70,750
Department of Geology	22	134,593	1,989	7,783
Department of Zoölogy	40	98,647	1,817	33,968
The Library	14	102,830	2,540	225,527
Section of Photography	20	114,455	1,152	.....

ACCESSIONS.— In the Department of Anthropology the most remarkable purchase of the year is represented by the acquisition made at the Panama-Pacific International Exposition, consisting of a Chinese honorary gateway and eighty-four models of Chinese pagodas. This material was turned out by the Industrial School maintained by the Jesuit Establishment Sikkawei near Shanghai. The gateway is entirely carved of teakwood, and in its monumental character presents a fine example of Chinese architecture, and thus far is the first monument of this art in the Museum that is constructed on the size of an original. The magnitude of the composition, the harmony of proportions, the high technical skill, the numerous artistic and beautiful carvings, the wealth of ingenious decorative designs which embody a fine record of Chinese thought, make this object a most striking and prominent acquisition. The collection of eighty-four models of Chinese pagodas has both a highly scientific and an educational value. The pagodas are

the most conspicuous religious buildings of China, veritable landmarks with a detailed recorded history. This collection presents the very first comprehensive attempt to introduce them into a museum and to render their study generally accessible. The models being reproduced according to a rigid scale (about $\frac{1}{50}$ of the originals, on an average), convey an exact idea of the original monuments and allow a minute study, even of details of construction. All provinces of China are represented in the collection; besides, there are two pagodas from Korea and two from Tibet. A prominent accession by purchase is a collection of more than eight hundred Mexican archaeological objects. The majority of antiquities in this collection are from excavations on the outskirts of San Miguel Amantla, Azcapotzalco. Among the hundred pieces of pottery forming a part of this collection are many rare and unique forms. There are also about two hundred small objects of great excellence and artistic quality, comprising Mixtec stone figurines, mirrors of obsidian and pyrate nodules, beads and pendants of various forms carved from jadeite, agate, and other translucent stones. Another acquisition made by purchase consists of seven choice Navaho blankets, in good condition, collected about forty years ago at Fort Wingate, New Mexico, by Lieut. Col. Wilson T. Hartz of the U. S. Army. The most notable gift received during the year is the collection of Japanese sword-guards and sword-furniture brought together by the efforts of Dr. Frank W. Gunsaulus. This important collection consists of over nine hundred specimens, comprising all the manifold designs ever conceived for the decoration of sword-guards, and covering all periods from mediæval to modern times. These appurtenances of the sword represent a splendid object-lesson in the application of Japanese design, and eloquently reveal the innate spirit of Japanese chivalry and gallantry. The gift of Dr. Gunsaulus is accompanied by a valuable collection of books relating to Japanese art and in particular to sword-guards, as well as by a special catalogue in manuscript, prepared by Miss Helen Gunsaulus with great care after many years of earnest study of the subject. Also 1,793 negatives of the sword-guards (the obverse and reverse of each having been taken) were presented by Dr. Gunsaulus. Eight musical instruments made in Peking were presented by the Commission of the Republic of China at the Panama-Pacific International Exposition. To Mr. Luther Parker, a former government official in the Philippines, the Department is indebted for a small, but very interesting collection of ancient pottery fragments and other material, found by him in burial caves on the Islands. This pottery comes from the kilns of Sawankalok in Siam and from those of southern China, and testifies to the mediæval intercourse of the Islands

with the mainland of south-eastern Asia. Of special interest is a fragment of Celadon pottery of Chinese origin, the body of which exhibits a pure white porcelain mass, while as a rule the early Celadon glaze is wrought over a crude stoneware body. Mr. Arthur B. Jones enabled the Museum to acquire a silver statuette made in Lhasa, Tibet, and inlaid with pearls, turquois, and coral; it represents Amitabha, the Buddha of Light. Two fine old Navaho blankets, one of bayeta, are gifts from Mr. Homer E. Sargent. Mr. Sargent also provided funds for the purchase of a collection of ancient pottery from Casas Grandes, Mexico. It consists of 162 small pieces comprising coiled and indented, smooth, undecorated, polished red and black, as well as the beautiful polychrome ware characteristic of that region. It is equally of scientific and artistic value. Mr. Sargent also presented to the Museum twenty beautiful old head-plumes worn by the Karok Indians of northwestern California in the White Deer-Skin Dance. To Mr. Edward E. Ayer are due six fine old buckskin skirts, two aprons ornamented with pine-nuts, three excellent head-bands of buckskin, worn in the Jumping Dance, and a quiver of basketry carried during the same dance-ceremony, all from the Hupa, Yurok, and Karok Indians of northwestern California. Mr. Ayer also contributed thirty-eight prehistoric stone implements collected in the vicinity of Phoenix, Arizona. An interesting image carved from green quartz, of Mexican origin, was presented by Mrs. S. E. Barrett.

The number of accessions received by the Department of Botany during the year numbered 48, of these all the specimens of 44 have been prepared, organized, and catalogued. The accessions comprise 44 economic and 20,248 herbarium specimens. The most important addition to the plant collections is that of the private herbarium of Elihu Hall, presented by the family of the late Mr. Hall. This herbarium is estimated to contain about 35,000 sheets; it also comprises a great mass of duplicates that will be utilized in exchanges. The Hall herbarium embraces Mr. Hall's personal collections in Illinois, Texas, and Oregon, and Hall and Harbor's Rocky Mountain Plants; together with a mass of material acquired in exchange with his contemporaries: Curtiss, Bebb, Clinton Patterson, Bolander, Faxon, Gray, M. E. Jones, Mohr, Canby, Hale, Vasey, Blake, Bishop, Fendler, Eaton, Garber, Howell, Parry, Lemmon, Macowan, Oakes, Porter, Ravenel, Wolf, and many others in North America. From his foreign exchanges he secured a complete set of all the numbers of the *Relique Mailleanæ*, and very full series of Bourgeau, Spain; Dænen, Switzerland; Blanche, Syria; Laresche, Switzerland; Gaillardot, Syria; Cosson, France; Heldereich, Greece; Mathonnet, France; Bourgeau, Italy; Timothée, France; Pisa

Herbarium, Italy; Bordere, France; Bunge, China; Bourgeau, France; Müller, Australia; McOwan, South Africa; Bolus, Africa, and many others. The Hall herbarium embraces the years 1845 to 1880. Its unique element consists in a large number of specimens gained by growing plants near his home, in the neighborhood of Athens, Illinois, from seeds gathered in the western and southwestern regions of the United States and others secured from fruiting herbarium specimens from all parts of the world; thus enabling investigators to compare original plants with those grown in a widely different environment. The other notable additions for the year are: Ames, Philippine orchids 258; Clements, California plants 371; Gaumer, Yucatan 311; Grant, Washington 76; Miss King, Kentucky 397; Lansing and Sherff, Illinois 92; Meyer, China 81; Miss Moodie, Alberta 398; New York Botanical Garden, West Indies 1,447; Miss Standley, Florida 335; U. S. National Herbarium, various regions 324; University of California, California 129; and Wenzel, Philippines 636. The additions to the organized herbarium during the year are regionally shown in the following table. These figures represent only those regions that have been augmented during the past year — not the herbarium as a whole:

LOCALITY	Added to Herbarium in 1916	Total in Herbarium
ARCTIC REGION:		
Spitzbergen	3	8
ALASKA	3	1,151
Ottka Island	1	1
Unalaska	1	36
CANADA:		
Alberta	418	1,151
Nova Scotia	1	383
UNITED STATES:		
Alabama	1	1,540
Arizona	59	8,190
California	505	24,273
Santa Catalina Isl.	1	187
San Benedicto Isl.	1	10
Colorado	6	9,258
Dakota, North	75	637
Dakota, South	4	1,306
District of Columbia	14	2,524
Florida (Excl. of Keys)	342	20,107
Idaho	2	3,650
Illinois	948	23,186
Indiana	36	6,257
Kentucky	397	1,368
Maryland	23	1,200
Michigan	78	3,431
Isle Royal	1	1

LOCALITY	Added to Herbarium in 1916	Total in Herbarium
UNITED STATES:		
Montana	1	4,029
Nebraska	2	493
Nevada	7	1,270
New Hampshire	4	1,554
New Mexico	14	3,502
New York	20	6,457
Ohio	1	2,045
Oklahoma	2	296
Oregon	1,013	8,401
Pennsylvania	8	10,130
Rocky Mountains	946	2,322
Texas	1,290	9,607
Utah	5	2,548
Virginia	11	2,723
Washington	77	7,420
Wisconsin	32	4,931
Wyoming	3	1,569
Yellowstone	1	528
BERMUDA	8	669
WEST INDIES:		
Anagada	7	33
Bahamas:		
Mangrove Cay	1	7
New Providence	1	2,444
Barbados	3	353
Cayman Brac	3	98
Cuba	206	10,948
Isle of Pines	10	658
Dominica	13	90
Haiti	22	331
Jamaica	564	7,218
Martinique	1	618
Porto Rico	613	4,727
Culebra	1	212
St. Croix	1	1,280
Santo Domingo	5	1,322
St. Kitts	1	13
Tortola	1	33
CENTRAL AMERICA:		
Costa Rica	2	595
Guatemala	1	3,054
Honduras	1	272
Ruatan	2	23
Mexico	29	36,983
Lower California	2	1,682
Guadaloupe Isl.	1	42
Yucatan	1,088	5,970
Panama	21	103

92 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

LOCALITY	Added to Herbarium in 1916	Total in Herbarium
SOUTH AMERICA:		
Argentine	94	1,065
Bolivia	8	3,924
Brazil	1	596
Venezuela:		
Curacao	7	99
Ecuador	1	850
Trinidad	1	487
EUROPE (in general)	12	93
Austro-Hungary	504	7,773
Belgium	89	283
Denmark	10	381
France	4,152	8,337
Guernsey	1	1
Germany	367	8,655
Great Britain:		
Angle Isl.	1	1
England	117	2,462
Ireland	8	172
Scotland	35	544
Wales	4	83
Greece	172	696
Italy	955	3,503
Lapland	18	158
Macedonia	1	1
Mediterranean Islands:		
Corsica	13	67
Malta	1	6
Majorca	1	4
Norway	63	1,178
Portugal	11	31
Russia	29	1,626
Spain	278	632
Sweden	264	9,599
Switzerland	980	3,632
Turkey	3	20
AFRICA:		
Abyssinia	1	220
Algeria	424	564
Egypt	10	46
Morocco	1	7
South Africa	629	1,912
Canary Islands	47	47
Madeira	83	103
Mauritius	9	21
Nubia	1	10
Tunis	72	79
ASIA:		
Arabia	1	20

LOCALITY	Added to Herbarium in 1916	Total in Herbarium
ASIA:		
Asia Minor	45	104
China:		
Altai Mountains	291	291
Mongolia	4	6
Sungaria	45	45
India	24	1,062
Japan	1	297
Persia	28	44
Philippine Islands	895	8,912
Siberia	5	468
Syria	280	362
AUSTRALIA (general)	181	2,234
New South Wales	12	258
Queensland	4	25
South Australia	2	2
Tasmania	1	307
Victoria	4	430
West Australia	17	142
OCEANICA:		
Marquesas Islands:		
Muka Hiva	4	4
Sandwich Islands (general)	5	489
Oahu	2	495
Horticultural	65	2,736
Illustrations mounted as Herbarium sheets	109	2,032

In the Department of Geology a considerable number of valuable accessions were received from exhibitors at the Panama-Pacific International Exposition. The commissions or firms presenting important material were the Gas Light and Coke Company, London, England, Australian Commission, Bolivian Commission, New Zealand Commission, Chinese Commission, and Greek Commission. The Gas Light and Coke Company, London, England, presented 223 specimens illustrating the by-products of gas manufacture and a mahogany floor case for its exhibition. The series is very complete and well prepared, showing the various products obtained from the distillation of coal. The specimens include coal, coke, pitch, large masses of crystals of prussiate of potash, various dyes, various hydro-carbons, such as benzol, toluol and varieties of creosote, various forms of naphthaline, pyridine, anthracene, alizarin, ammoniacal liquids, sulphates, nitrates, muriates, carbonates, and other compounds of ammonia, sulphur, coperas, sodium and potassium cyanides, various blue coloring matters, other coloring matters, cyanogen, fluorescin, and various other products. The whole forms a very nearly complete series illustrating products

which may be obtained from coal. The Australian Commission presented 61 specimens illustrating many important ores of Australia. Many of the specimens are of large size, and the whole accession aggregated several hundred pounds in weight. An important feature was a full series of ores and concentrates of lead and zinc from the Broken Hill district. There are also gold ores, tin and copper ores from many localities, and a number of miscellaneous specimens. They are all of excellent quality and will add much to the representation of Australian ores in the Museum. The Bolivian Commission presented 80 specimens consisting chiefly of ores of tin from various mines of Bolivia. A large number of these specimens illustrate ores of remarkable richness. Although Bolivia is one of the world's most important sources of tin, the Museum had previously no representation of its tin ores, so that the accession is especially welcome. Ores of bismuth, molybdenum and copper were also included in the series received. Among the copper ores, some remarkable arborescent aggregates of native copper are of special interest. The Chinese Commission gave a series of ores numbering 291 specimens, chiefly from the Province of Honan, China. These include specimens of gold ore, sulphur, silver ore, asbestos, copper ore, stream tin, manganese ore, antimony ore, fluorite, coke, and coal. Specimens of lead, zinc, and iron made from these ores were also included. There were also a number of specimens of mineralogical interest, such as two specimens of crystallized cinnabar, a large one of calcite and a number of crystallized smoky quartzes. All of this material is entirely new to the collections, no specimens from this part of China having been previously possessed in the Department. The Commission also presented a model of a large lead mining, milling, and dressing works at Shui kao Shan, Province of Hunan, China. This model is about 13 feet square and represents on a scale of 1 to 135 the topography of the region where the lead mines are located and the various buildings, derricks, pits, and tracks by means of which the activities of the mines are carried on. The model has been prepared with care and accuracy and has geographic as well as economic interest. The Greek Commission presented 315 specimens of ores which represent all the important mineral products of Greece except the marbles. They include specimens of zinc, lead, silver, iron, manganese, nickel, copper and chrome ores together with specimens of emery and magnesite. There are also specimens of lead and base bullion made from the ores, and of emery powders, calcined magnesite, magnesite cement and magnesite fire brick. The specimens are of large size and well adapted for museum display. The large blocks of Greek emery are especially satisfactory, as the Museum has hitherto been unable to secure display

specimens of satisfactory size of this widely used and well-known substance. The zinc ores include a great variety of the brilliantly colored smithsonites for which Laurium is famous. Besides the ores there are two lots of the slags from the silver smelting operations of the ancient Greeks between 600 B.C. and 400 B.C. which are now being resmelted to save the silver that the early smelters could not extract. The New Zealand Commission presented a restoration of the giant, extinct bird known as the Moa. This restoration was prepared with great care at the New Zealand Museum, and shows a bird standing over 12 feet in height with a body measuring 8 feet in length. The probable feather covering is shown, also the form and dimensions of the bird. The great size of this creature makes it an object of special interest. A very valuable accession obtained largely through the efforts of Mr. W. J. Chalmers, consisted of 40 specimens of tin and copper ores presented by the leading tin mining companies of South Africa. These ores had not been previously represented in the collections and they are also of importance since they show characters not seen in the tin ores of other regions. Mr. Chalmers also kindly presented two especially fine crystals of gem tourmaline from California and a specimen of crystallized gold from French Guiana. A series of pebbles from Wyoming showing unusual polishing by wind, was presented by Messrs. Geo. F. Porter and A. A. Sprague. From the Chamber of Commerce of Chlovide, Arizona, a representative series of the gold, silver, lead, and other ores of that district was received by gift, making a valued addition. An interesting series of 15 specimens illustrating the manufacture of potash and other products from alunite and of nitrogen products manufactured from the air, was presented by the Armour Fertilizer Works. In this connection also, the gift by Professor S. H. Knight, of the University of Wyoming, of specimens of the leucitic rocks of Wyoming, which are considered possible sources of commercial potash, is worthy of mention. The Titanium Alloys Manufacturing Company presented a specimen of metallic titanium, which is a rarely produced substance, together with specimens of two ferro-titanium alloys. The Norton Laboratories gave a large bar of metallic magnesium. A series of pegmatite products used in cement facing and two large masses of pegmatite were donated by the Crown Point Spar Company of Essex, New York. Professor E. L. Moseley of Bowling Green, Ohio, gave some interesting specimens of celestite and invertebrate fossils. By exchange, 13 specimens of stream concretions were obtained from Professor F. Justin Roddy and specimens of the Dalton and Lake Okechobee meteorites were received from the United States National Museum. An iron meteorite from Batavia, New York, weighing 5,930

grams, and an individual weighing 2,000 grams of the Plainview, Texas, meteorite fall were purchased, as were also specimens of four other meteorites. Eight specimens of the peculiar glassy forms called australites were also purchased. By collection, about 40 specimens of fossils and economic specimens were added as a result of the Curator's trip to La Salle County, Illinois, and 75 specimens minerals, dendrites and rock products, from field work in Maine. The Assistant Curator collected in Arizona 20 specimens of copper ores and fossils.

In the Department of Zoölogy the most important accession of the year is a very fine and practically perfect egg of the extinct bird *Æpyornis*. It was purchased from Mr. Peter A. Bjelde who obtained it from natives in Madagascar and personally brought it from there to this country. The first installment of the Museum's share of the birds taken on the Collins-Day expedition consisting of 215 bird skins were received from the American Museum of Natural History. The mammals of this expedition were received early in the year but have not yet been accessioned. A collection of 57 mammals and 76 bird skins from Argentina were presented by the Argentine Commissioners to the Panama-Pacific International Exposition and deserve special mention. Among them were a number of species new to the collection. To the collection of fishes and reptiles there were added but six specimens. One of them, however, a Yellow-bellied Sea Snake, was very desirable, as well as new to the Museum collection. By far the largest and most important addition than can be recorded was the Hall collection of shells, which was a donation from the heirs of Elihu Hall, Athens, Illinois. This collection consists mainly of American fresh-water shells and contains at least several thousand named specimens. As they have not yet been gone over and sorted by a specialist, the exact number of specimens that will be accessioned eventually cannot be definitely given at this time. Among the insects obtained, the most desirable were 63 Sphinx Moths secured, by an exchange, from Mr. B. Preston Clark of Boston. Of this lot at least thirty species were new to the collection. Another desirable, though smaller acquisition, was an exchange whereby 17 rare butterflies from northern India were secured. The accessions may be summarized as follows: Purchase: 138 mammals, 175 birds; 4 nests and eggs; By gift: 61 mammals, 306 birds, 14 nests and eggs, and approximately 3,000 shells; By exchange: 39 mammals and 80 insects.

EXPEDITIONS AND FIELD WORK.—A few days were spent by the Curator of Geology in visiting several localities in La Salle County, Illinois, and as a result specimens of a number of occurrences which had not been

previously represented in the collections were procured. The material obtained included specimens of cone-in-cone structure, stylolites and concretions, fossil ferns and a series of hydraulic limestones and cements. A collecting trip was also made by the Curator of Geology among the pegmatite regions of western Maine. A large number of valuable specimens of the rare minerals of the region, such as tourmaline, columbite, beryl, and herderite were procured, also some showy dendrites and a striking series illustrating zonal weathering. The Assistant Curator of Geology through a brief trip among most of the large porphyry copper mines of New Mexico and Arizona secured a representative though limited suite of the characteristic ores of this important new development of the mining industry. The large mines visited on this trip and from which specimens were secured were the Chino and Empire Zinc mines in New Mexico, and the Copper Queen, Old Dominion, Inspiration, and Miami mines in Arizona. At Grand Canyon, Arizona, also, he obtained a number of specimens of Cretaceous fossils, copper and silver ores and asbestos.

INSTALLATION, REARRANGEMENT, AND PERMANENT IMPROVEMENT.— There have been placed on permanent exhibition in the Department of Anthropology 90 new cases, most of these being completely labeled. The material installed in these cases is distributed over the various divisions as follows: African ethnology 27 cases; Melanesian ethnology 44 cases; American ethnology 1 case; American Archaeology 7 cases, and Chinese pagodas 11. The interesting Mexican pottery from Casas Grandes presented by Mr. Homer E. Sargent has been installed in two standard cases in the East Court. The recent acquisition of Navaho blankets necessitated the reinstallation of a case of Navaho blankety in Hall 6. Progress has been made in the installation in standard cases in the East Court, which, since the opening of the Museum, has been shown in the old Peabody cases from the World's Columbian Exposition. Four cases of the Hopewell material, from Ross County, Ohio, are well along toward completion in Alcove 83. The new arrangement on shelves is very satisfactory, and brings out to advantage the scientific value of this remarkable collection. The prehistoric pottery from Chiriqui Republic of Panama, has been permanently placed on exhibition in two standard cases in Alcove 93 of the East Court. Costa Rican archaeology now in Alcove 84 is being prepared for permanent exhibition. All Peabody cases released, as the work of reinstallation progresses, are used for permanent storage in Halls 68 and 69 of the West Annex in accordance with the plan outlined a year ago. For the purpose of preserving and photographing material, work has been done in 138 exhibition cases. Installed cases of the Joseph N. Field collec-

tions have been moved from Hall 72 into Hall 80, thus giving needed floor space in the former for working purposes. One-fourth of the floor space in Hall 71 has been cleared with the result that desired additional room for installation work has been gained. The African collection was carefully overhauled, and a large amount of material previously unidentified was studied and placed in its proper grouping. This material is now divided into three groups: the first, intended for exhibition; the second, reserved for the study collection; the third, for exchange. The exhibition collection has been installed in twenty-seven standard cases fully labeled, and illustrated by maps and a considerable number of photographs. The most notable exhibit in this series is presented by the artistic cast bronze and ivory carvings from Benin, many of the specimens being of unusual excellence and rarity. The balance of the Northwest Coast of Africa, the Sudan, and the upper tributaries of the Nile, are represented by five cases. Collections from Somali-land and the Lake Region of Eastern Africa occupy 8 cases, illustrating different types of culture like that of the Arabised tribes, the war-like Masai, and the nomadic Wandorobo. A very complete collection from the Ovimbundu and Zulu gives an instructive view of the life and industries of these most advanced tribes of southern Africa. Congo material is displayed in 6 cases, showing the life of the Pigmies, as well as of the metal-working Bantu stock. An interesting feature of the last mentioned collection is a large group of fetish objects and other articles relating to the highly developed ceremonial and religious life of those peoples. In their present arrangement, the African collections, though still far from being complete, give a vivid picture of the various cultures of the continent, and likewise illustrate well the interrelations of the different tribes. Further progress has been made in the installation of the Joseph N. Field South Sea Islands collection, 44 cases devoted to Melanesian ethnology having been completed. This material covers the following regions. The two islands Buka and Bougainville, belonging to the group of the Solomon Islands, are fully represented by 8 cases. Especially noteworthy in this exhibit are wood carvings including one large human statue; the peculiar balloon-shaped hats worn by the Matasese, the young men who are initiated into a secret society; the huge coiled baskets, wooden platters, heavy stone nut-crackers, and a complete series of stone implements, showing the different ways of hafting the axes. The central Solomons are represented by objects inlaid with pearl and by a large wooden bowl. Fourteen cases are devoted to New Ireland, with a display of huge ancestral images of wood and memorial carvings (from central New Ireland and the Gardner Islands), ancestral figures of stone, and a great variety of masks,

some very elaborate. The different types of clubs and spears, including those terminating in worked human bone, are completely represented. Native life on the island of New Hanover is shown in another case. The elaborately decorated clubs and spears of St. Matthias together with large ornamented combs, and woven mats and belts occupy two cases. The same number of cases illustrates the culture of Lihir, Aneri, Tanga, Nissan, small islands east of New Ireland, the manufacture of shell arm rings from Tanga and shell money from Nissan being especially noteworthy. Two further cases are concerned with Lord Howe, Mortlock, Tasman, and Sikaiana, small islands lying north of the Solomons, but showing a culture with Micronesian and Polynesian, rather than Melanesian affinities. New Britain is represented by a very complete collection, in sixteen cases, from the Gazelle Peninsula. It includes many valuable old specimens obtained and figured by Richard Parkinson, also a number of remarkable Baining and Sulka masks, numerous specimens from central and western New Britain as well as from the neighboring islands, showing a strong New Guinea influence. A representative collection from the southwest coast about Cape Merkus illustrates the life and industries of the people. There is a series of their finely carved wooden bowls, coiled baskets, painted bark-cloth, feather head-dresses used in dances, and personal ornaments. The Philippine material has been revised and partially reinstalled. The models of Chinese pagodas have been installed in three standard four-foot cases and eight special cases arranged in Hall 48 of the East Annex. This Hall was opened to the public at the end of the year. The Chinese gateway has been erected on the east side of the Rotunda.

In the Department of Botany the following cases have been installed, labeled and placed on exhibition: in the American Forestry Series: Sweet Buckeye; Fraser's Fir; Southern Red Cedar; Loblolly Bay; Silver Bell; Pennsylvania Cherry; Ogeche Lime; Water Gum; Black Cherry; and Basswood. Specimens, with their labels, sufficient for the installation of twelve other cases have been fully prepared and are ready to be put in place as soon as the cases for their accommodation are furnished. Installation in the herbarium cases has been sadly interfered with on account of lack of space in the rooms available to this section of the department. It has become necessary to remove from installation all specimens in the lower plant orders, wrap them up in bundles and store them away, in order to give up their place in the cases to families more frequently consulted. This has also been necessary in the case of newly arriving Eurasian plants, until the end of the year reveals over three hundred such bundles rendered unavailable for study or reference. A discouraging amount of time and labor had to be

wasted in shifting and reshifting installed specimens in order to make room for the installation of new material and keep the collection as available as possible in the cramped quarters they occupy. Space for the organization and preparation of the Elihu Hall herbarium was gained by shifting a number of exhibition cases into a hollow square on the exhibition gallery and connecting the case with the preparator's room.

In the Department of Geology three halls, Nos. 60, 61, and 62, which had been closed to the public for several years were reinstalled and reopened. In two of these halls are now exhibited numerous large, vertebrate fossils of Pleistocene age, including skeletons of the Cave Bear and large birds of New Zealand, the mastodon skull found at Yorkville, Illinois, and restorations of the giant sloth, large turtle, large armadillo or Glyptodon, and fossil shark jaws. Various bones of the mammoth and mastodon, small whales and Tertiary titanotheres are also shown in these halls, and a series of the large, corkscrew-like forms known as *Dæmonelix*. In addition, a model of the above-ground workings of the Shui kao Shan lead mine, Hunan, China, has been installed in Hall 60. This model covers an area of about 170 square feet. It is enclosed in a case thirteen feet square and placed on a base three feet high. The case and base were constructed at the Museum, the model itself was the gift of the Chinese Commission to the Panama-Pacific International Exposition. The model illustrates on a scale of 1:135 the plant at the surface of the mine, and the ore dressing works at which the ore is prepared for smelting. The plant was built by European trained men and illustrates the extent and variety of operations carried on in modern mining. A large specimen of the ore obtained at the mine accompanies the exhibit. To the third hall, Hall 62, of the group recently opened, the petroleum collection previously exhibited in Alcove 107 was transferred, with some additions. As now installed, the collection comprises nine wall cases, two pyramidal floor cases and two flat floor cases of specimens. Of these cases, five are devoted to the petroleums produced in different oil fields, one to a quantitative exhibit of the products of one barrel of petroleum, four to various finished products of petroleum, and three to specimens of petroleum-bearing sands and rocks and their characteristic fossils. To the space left vacant in Alcove 107 by the removal of the petroleum exhibit, five cases containing stone and iron meteorites were moved and fully reinstalled. One of these cases was devoted to Canyon Diablo meteorites, of which the collection contains a large number of specimens varying in weight from 1013 lbs. to a few ounces. The total weight of this meteorite thus exhibited is over 5,000 lbs. In other cases all the larger

stone and iron-stone meteorites were placed, the specimens being grouped so as to bring those of the same class together. At the same time the opportunity was improved to definitely group all the meteorites, the grouping being on the basis of a classification founded on structural features. In Hall 31 a number of series have been rearranged with or without the addition of new material. One of these is a collection of volcanic products which has been so reorganized as to exhibit the characteristic products of each locality in groups. At present, good series of the products of the volcanoes of Vesuvius, Popocatepetl, Kilauea, Sakurijima, the Auvergne region and many localities in the western United States are shown. A special addition made to the products of Vesuvius was a series of specimens of volcanic ash thrown out during the eruption of April, 1906. These specimens show the changes in the character of the ash during successive days of the eruption. Photographs of a recent eruption of Sakurijima were installed among the products of that volcano. Other additions made to the series of dynamical geological products in Hall 31 include six splendid specimens of zonal weathering which were collected by the Curator in Maine, specimens of dendrites similarly collected, a number of specimens of cone-in-cone structure, stylolites, etc., collected by the Curator in Illinois, and a number of specimens showing several varieties of weathering. Another change made in the installation of this hall was the removal to storage of the series of New York rocks and the installation in its place of collections illustrating the uses of lime and of borax. In the collection illustrating lime and its uses, a number of varieties of limestone and lime from various localities are shown and following these, illustrations of chemical and agricultural uses of lime and limestone, uses of lime for paints, plasters, and cements, medical uses of lime, etc. In the borax collection are shown various borax minerals, various refined boraxes, and illustrations of the uses of borax in the arts. Another collection prepared and installed in this hall was one illustrating sources and uses of potash. Various rocks and minerals containing potash in appreciable quantities are exhibited in this collection and many of the finished products from these rocks, including not only potash but alumina, sulphuric acid, etc. The collection illustrating magnesia and its uses was considerably enlarged and rearranged, additions of Indian and Grecian magnesite, raw and calcined, being made, also of metallic magnesium, hydraulic cements, magnesia packing, etc. To the sulphur collection were added some interesting specimens of molded sulphur received from China. Some additions were also made to the economic barite and fluorite collections. A magnetic compass was installed in connection with the large specimen of lodestone in Hall 30, the compass

being supported on a pivoted brass arm in such a manner that it can be moved by the visitor in a semi-circle about the lodestone. The attraction of the lodestone causes a reversal of the ends of the needle and a constant pointing of the needle towards the stone, thus illustrating its permanent magnetic properties. In Skiff Hall, a number of additional collections have been installed, space for introduction of new material having been gained by removal of some previously exhibited. In place of two cases of onyx, the case of products of coal received from the London, England, Gas Light and Coke Company was installed. This case contains over 200 large and showy specimens representing the products of coal, such as coke, ammonia compounds, carbolic acid, prussiates and cyanides, creosotes, dyes and pigments. The whole makes a brilliant and instructive exhibit and one of special interest at this time, since the domestic production of many of these compounds has become desirable in view of the difficulty of obtaining them from abroad. The exhibit is installed in a case received from the London Company, some alterations having been made in it to make it harmonize in appearance with the other cases in the hall. To other collections in the hall a large number of additions have been made, chiefly of material received from the Panama-Pacific International Exposition. The greatest of these additions has been made to the tin ore collection. The additions include the splendid series of South African tin ores obtained through the generous efforts of Mr. W. J. Chalmers, about an equal number of Bolivian tin ores, 15 specimens of Australian tin ores and some tin ores from scattering localities. Owing to increased interest in tungsten ores, this collection also was completely rearranged, and a full series from most of the important localities producing such ores at this time was procured and exhibited. The collection of gold and silver ores of Ontario has been reinstalled with the addition of specimens representing several of the newly discovered gold districts. Part of the copper ore collections have been revised, with the addition of specimens representing the "porphyry" ores of the United States, and typical ores of copper mining districts of Bolivia, South Africa and China. A series of Chinese ores has been added to the iron ore collection. Specimens from the Panama-Pacific International Exposition and from the material received from Mr. W. J. Chalmers have been installed with the ores of gold, silver, lead, tungsten, and mercury, thus materially strengthening these collections. A collection from the potash deposits of Utah illustrating the ores and their aluminum salts which are their by-products, has been installed with the aluminum ores collection. A complete skeleton of the American camel *Oxydactylus longipes*, of the lower Miocene period, was installed in a floor case in Hall 36.

This camel was remarkable for its size and slender structure, the slenderness being such as to make the skeleton difficult to mount. In order to obtain sufficient rigidity, steel sockets were set in the limb bones at intervals and these served as fastenings for pieces of half-round steel which were placed along the surfaces of the bones. In this way a firm but graceful mount was secured. The base of the mount was made of material imitative of the matrix in which the skeleton was found. In an adjoining case a fore leg of *Alticamelus*, another American camel remarkable for the size and length of its limb bones has been installed; and in still another case a number of skulls and limb bones of Miocene camels and horses have been placed. All of this material was collected by Museum expeditions in the western states. The skeleton of the saber tooth cat in this hall was transferred to a plaster base imitating the matrix from which it was taken. The series of Jurassic mollusks from Patagonia collected by Professor Salisbury has been installed in Hall 36, and a case of Devonian fossils has been brought from Hall 61 and installed in this hall. In the paleontological laboratory the cleaning and mounting of a skeleton of *Oxydactylus* has been completed; a fore limb of *Alticamelus* has been prepared and mounted; a skeleton of a small, Miocene, burrowing carnivore found in one of the peculiar corkscrew-like forms occurring in Nebraska has been prepared for mounting; two partial skeletons of the Oligocene three-toed horse, *Meshippus bairdii*, have been prepared, as have also a large skull of *Diceratherium* and fore limbs of the smallest Miocene horse, *Merychippus*; the mounting of a skeleton of a fossil wolf from the Los Angeles beds has been nearly completed and the skeleton of the saber tooth cat from the same locality has been transferred to a base imitative of the matrix from which the specimen was obtained.

In the Department of Zoology the reinstallation of the shell exhibit has been continued during the year. Seven cases of shells were installed, 10 of the new A-cases now being filled. Of this number 7 have been permanently labeled. Some idea of the amount of work required to install a case may be formed when it is stated that one of those just filled contains 2,829 shells, most of which has to be mounted in a special manner and which required 718 tablets and almost the same number of individual shelves for their installation. In the Division of Osteology 337 skulls and 12 skeletons were prepared. Three skeletons were also prepared for the exhibition collection. The usual precautions were taken against the depredations of insect pests and all collections were disinfected. Most of the exhibition cases are now provided with devices which permit disinfection without opening the case. In the serial collection of mammals on exhibition, rearrangement and elimination of

duplicates and imperfect specimens has been commenced. Early in the year material in the taxidermists' shop was thoroughly overhauled and a few old specimens of no value, were condemned and destroyed. The skin dresser has been occupied most of the time in preparing skins of large mammals recently obtained. The group of Alaska Moose has been finished and installed in an alcove of the west court. It is the largest single group thus far produced in the Museum shops and is undoubtedly the best representation of this splendid game animal in existence. In a case 24 feet in width and 12 feet in depth and provided with a large painted background the scene reproduced is of the interior of Kenai Peninsula, Alaska, with a foreground of poplars, willows, small spruce, and mixed low vegetation a background of lakes and streams and snow-clad mountains. Four animals are shown, an old bull, a young bull, an adult cow and a calf of the year. The skins of these are in the finest possible condition, having been personally collected, preserved, shipped, dressed and mounted by a taxidermist of the Museum force. The antlers of the old bull of this group are the largest of which there is authentic record, the total spread between outermost point being $78\frac{1}{8}$ inches. These "record" antlers have been in the possession of the Museum for some years and on account of their special interest it was decided to take them from storage and make them available to the public by placing them in this group even though it was necessary to associate them with the skin of an animal not the one which bore them originally. Therefore they were mounted with the skin of another old bull of very large size and the facts stated on the label. During the year work has progressed on other mammal groups notably the capybara and jaguar group which require the preparation of a large amount of artificial tropical vegetation. It is now almost ready for installation. Plans and preliminary models have been made for a new group of American Bison in which entirely fresh specimens of high quality will be used. The group formerly prepared under difficulties from relatively poor material has been dismantled. Living animals for the new group have been selected and as soon as they are in proper condition will be prepared for use by the Museum taxidermists, who will thus be able to take all necessary measurements and life studies. A few additions to the systematic exhibition of mammals have been made, the most important being a pair of Saiga antelope, a species from the steppes of western Asia having unusual amber-colored horns and long tubular overhanging nostrils. Other mammals added to this series include South American Cavies, the wild progenitors of Guinea pigs, African wild rats, and fresh specimens of North American hares. The fourth and final unit of the first four-section case of tropical

bird groups was finished and installed. The group shown consists of birds characteristic of the low tropics of north-central Brazil where one of the Museum's expeditions worked a few years ago. The most conspicuous of these are the large tropical American storks known as the Jabiru. Others included with them are ibises, sun bitterns, gallinules, and boatbills. Thirty-six mounted birds from Argentine and twenty from North America, including a Passenger Pigeon, were added to the serial exhibition collection.

THE H. W. HARRIS PUBLIC SCHOOL EXTENSION OF FIELD MUSEUM OF NATURAL HISTORY.

—At the close of the year 476 cases were available for circulation among the public schools, 86 cases having been installed during the year. Six cases were permanently withdrawn from the supply and sent to the Museum of History, Art and Science of Los Angeles. There are also many cases on hand in various stages of preparation and installation. Not only do the members of the staff of this Department install all of the specimens of birds, mammals, fishes, reptiles, and insects, but they collect and prepare them for installation as well. Nearly all of the butterflies and birds found in and around Chicago are represented either by specimens installed or by specimens that have been partially prepared for installation. In many of the cases in which birds, mammals and reptiles are shown, enlarged colored photographs of the habitat or of characteristic environments of the specimens, form backgrounds. These backgrounds add greatly to the naturalness of the taxidermy and to the realism of the accessories employed, and reduce the use and need of much of the latter.

Sufficient time has elapsed since the inauguration of this work to permit competent judgment being passed upon the physical merits of the exhibition cases. It is gratifying to report that the type of case used has met all requirements demanded of it. The claim for the secureness of the installation of all specimens is well supported by the fact that thirty-four installed cases were transported by freight to San Francisco and returned, and not in a single instance was it necessary to repair any damage and in but one instance was it necessary to reinstall a specimen—that one being of a friable nature. The number now on hand of empty cases of the four and ten inch types is so small that a requisition for additional new cases will be made within a short time. It is more than likely, owing to space limitations, that with additional new cases some method, other than that now in use, for caring for empty and installed cases will have to be adopted. Representatives of the principals of the Chicago public schools expressed a desire to have types of the extension cases placed on permanent exhibition in one of the rooms of the Board of Education.

The school authorities sanctioned this request and granted permission to make the exhibition and designated for that purpose a room used by the principals and teachers as a committee room. Plans for displaying them are being perfected. An exchange of cases will be made. In compliance with the request of the president of the American Association of Museums to have an exhibit of the Museum extension cases made at a meeting of the association held in Washington, D. C., May 15-18, four cases were sent. In conjunction with the exhibition of the cases, there was read a brief paper prepared by the Curator on "The Development of The N. W. Harris Public School Extension of Field Museum of Natural History." Several cases containing birds have been loaned for a brief period to the Chicago Art Institute for the purpose of study by classes in nature study. A most painstaking and thorough investigation of the methods of installing the cases and the system of recording and circulating them among the schools, was made by Professor Yaezo Wado of the Department of Natural Science, First National College, Tokio, Japan, with the view of introducing the same or similar methods in Japan. The Public Museum of Oakland, California has adopted for its extension work, cases and methods similar to those of this Department.

As an evidence of the value of the cooperation between The N. W. Harris Public School Extension of Field Museum of Natural History and the public schools of Chicago, the following letter from John D. Shoop, superintendent of schools, to Director Frederick J. V. Skiff, is offered:

"I deem it a duty as well as I esteem it a privilege to write you in testimony of the results that, in the past few years, have attended the closer cooperation that has been established between the public schools and the Museum.

"The bequest made by Mr. N. W. Harris has proved of great value to the schools. The exhibits that have been assembled under the direction of Mr. Simms are valuable factors in intensifying and enlarging the interest of the pupils in the spheres of industry and nature. I am certain that you will be pleased to know that the movement made possible through the benevolence of Mr. Harris is eventuating in so much of interest and profit to our public school system."

PHOTOGRAPHY AND ILLUSTRATION.— The following is a tabulation of the work performed in this section:

	Number of Negatives made	Number of Prints made	Number of Lantern Slides made	Number of Enlargements made	Number of Negatives developed for Expe- ditions	Number of 6½x2½ Post- tives made. Used in making large Negatives
General	16	61	..	..	..	..
Anthropology	232	146	18	..	..	..
Botany	10	61	..	..	10	..
Geology	22	68	..	10	..	4
Zoology	6	180	..	..	6	..
Harris Extension	6	7	..	..	..	..
Distribution . . . . .	..	56	..	..	..	..
Gift . . . . .	..	94	..	..	..	..
Sale . . . . .	..	137	2	..	..	..
Totals	292	810	20	10	16	4
Total number of Catalogue entries during year 1916						1,152
Total number of Catalogue entries to December 31, 1916						114,455
Total number of Record Books						20

PRINTING.—The number of labels and other impressions made by the Section of Printing is as follows:

	Exhibition Labels	Other Impressions
Anthropology	4,509	1,250
Botany	234	30,200
Geology	1,478	1,000
Zoology	2,560	150
Library . . . . .	.....	3,250
General . . . . .	.....	17,730
N. W. Harris Public School Extension	1,036	2,950

Herewith are also submitted financial statements, list of accessions, names of members, etc., etc.

FREDERICK J. V. SKIFF, Director.

FINANCIAL STATEMENT

RECEIPTS AND DISBURSEMENTS

January 1, 1916, to December 31, 1916

RECEIPTS

Cash in Treasurer's hands, General Fund, December 31, 1915 . . .	\$4,126.39
Cash in Treasurer's hands, New Exhibition Cases Fund, December 31, 1915	917.71
Cash in Treasurer's hands, Endowment Sinking Fund, December 31, 1915	36.00
Petty Cash on hand, December 31, 1915	739.95
Dues of Life Members	23,600.00
Dues of Annual Members	990.00
Admissions and Check Rooms	5,413.35
Sale of Guides (Profit)	220.25
South Park Commissioners	15,000.00
Interest on Investments and Bank Balances	9,652.15
Field Endowment Income	131,500.00
Field Endowment Sinking Fund	1,199.61
Field Endowment Sinking Fund Investments retired	309.26
Field Endowment Sinking Fund Income	259.32
Life Memberships Fund Income	327.97
Life Memberships Fund Investments retired	3,907.88
New Exhibition Cases Fund Investments retired	4,850.00
New Exhibition Cases Fund Income	429.39
New Building Moving and Furnishing Fund Income	325.00
Stanley Field Plant Reproduction Fund	100.00
Stanley Field Ornithology Fund	1,000.00
Arthur B. Jones Buffalo Group Fund	472.72
H. W. Jackson Library Fund Income	40.00
Donations:	
W. J. Chalmers	\$ 20.00
Arthur B. Jones	60.00
Homer E. Sargent	200.00
	280.00
Sale of Picture Postal Cards	661.92
Guards' Uniform Account	311.50
Sundry Receipts	68.33
	<hr/>
	\$206,738.70

DISBURSEMENTS

Salaries		\$71,161.98
Guard Service		12,006.13
Janitor Service		6,807.34
Fire Protection		3,306.64
Light and Heat		13,132.28
Repairs and Alterations:		
Wages — Carpenters, Painters, Roofers, etc.	\$7,799.01	
Materials used — lumber, paints, oils, glass, etc.	554.83	8,353.84
Furniture and Fixtures:		
Cases and Bases	5,365.00	
Office Furniture and Herbarium Cases	845.00	6,210.00
The Library:		
Books and Periodicals	805.60	
Binding	552.85	
Sundries	136.98	1,495.43
Collections, etc., purchased		14,848.28
Installation expense		2,158.79
Expeditions		18.55
Publications		1,587.21
Picture Postal Cards		232.65
Sections of Photography and Printing — Supplies		323.44
General Expense Account:		
Freight, Expressage and Teaming	\$1,211.65	
Stationery, Postage and Telephone	826.48	
Liability Insurance	663.52	
Sundries	1,500.09	4,201.74
Stanley Field Plant Reproduction Fund		78.55
Arthur B. Jones Buffalo Group Fund		125.00
Stanley Field Ornithology Fund		925.00
H. W. Jackson Library Fund — Investments		20.00
New Building Moving and Furnishing Fund — Investments		23,400.00
Life Memberships Fund — Investments		26,321.25
Picture Postal Cards Fund — Certificate of Deposit		375.76
Endowment Sinking Fund — Investments		1,010.00
General Fund Investments (In Suspense)		2,225.00
		<u>\$200,324.86</u>
In Treasurer's hands, December 31, 1916:		
General Fund	\$2,188.49	
New Exhibition Cases Fund	791.60	
Life Memberships Fund	1,514.60	
Sundry other Funds	1,179.20	5,673.89
Petty Cash on hand, December 31, 1916		739.95
		<u>\$206,738.70</u>

ATTENDANCE AND RECEIPTS FROM JANUARY 1 TO DECEMBER 31, 1916

ATTENDANCE.			
Paid Attendance:			
Adults	18,088		
Children	1,827	19,915	
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Free Admission on Pay Days:			
School Children	5,933		
Students	3,179		
Teachers	605		
Members:			
Corporate	29		
Annual	31		
Life	6		
Officers' Families	41		
Special	84		
Press	2	9,910	
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Admissions on Free Days:			
Saturdays	40,779		
Sundays	136,439	177,218	
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Total Attendance		207,043	
Highest Attendance on any one day (July 9, 1916) . .		7,686	
Highest Paid Attendance on any one day (July 4, 1916)		640	
Average Daily Admissions (364 days)		568	
Average Paid Attendance (258 days)		77	

RECEIPTS.			
Guides sold — 881 at 25 cents each	\$	220.25	
Articles checked — 14,159 at 5 cents each		707.95	
Admissions		4,705.40	
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		\$5,633.60	

ACCESSIONS.

DEPARTMENT OF ANTHROPOLOGY

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

AYER, E. E., Chicago.

38 objects of stone comprising milling stones, small mortar, pestles, balls, celts, grooved axes and hammers—near Phoenix, Arizona.

6 buckskin dance skirts, 2 dance aprons, 3 ceremonial feather headbands,
1 basket quiver—California.

BARRETT, MRS. S. E., Chicago.

1 large green quartz image—Mexico.

CHINESE COMMISSION AT THE PANAMA-PACIFIC INTERNATIONAL
EXPOSITION, SAN FRANCISCO, California.

1 sulphur statuette—Shansi Province, China.

8 musical instruments—China.

DURNO, W. F., Chicago.

4 Japanese books on sword-guards—Japan.

FIELD, STANLEY, Chicago.

1 chert spear-head—Lake Bluff, Illinois.

FIELD MUSEUM OF NATURAL HISTORY.

Purchases:

1 carved teakwood gateway and 84 models of Chinese pagodas—Sikkawei,
near Shanghai, China.

1 Tibetan silver image, inlaid with pearls, turquoises, and corals, made
in Lhasa—Tibet.

1056 flint implements and 20 casts—Northern France.

1 banded slate celt—Bradyville, Tennessee.

2 ancient Buddhist stone-relief sculptures—Peshawar, India.

800 specimens archaeological material—Mexico.

7 Navaho blankets—Fort Wingate, New Mexico.

FREER, CHARLES L., Detroit, Michigan.

Reproduction of famous landscape roll by Ma Yüan, with pamphlet—
China.

GUNSAULUS, DR. FRANK W., Chicago.

926 Japanese sword-guards and sword furniture.

HOLBROOK, MISS FLORENCE, Chicago.

4 specimens Eskimo boots, gloves, and pocket-book, of sealskin—Greenland.

MAC DOWELL, C. H., Chicago.

1 stone celt—Malmö, Sweden.

MARTIN, HENRI, Paris, France.

100 fragments of bones, human and animal, and 125 specimens of flints—
La Quina and St. Croix, France (exchange).

1 cast of prehistoric skull (exchange).

MOORE, CLARENCE B., Philadelphia, Pa.

1 plaster cast of monolithic hatchet — Moundville, Alabama.

NEUBERGER, LOUIS, Chicago.

1 bow and 6 arrows — Philippines.

PARKER, LUTHER, San Francisco, Cal.

125 ancient fragments of pottery, skulls, and other material from caves;
basketry — Philippine Islands.

SARGENT, HOMER E., Chicago.

2 fine old Navaho blankets, one of bayeta.

162 specimens of prehistoric pottery — Casas Grandes, Chihuahua, Mexico.

20 feather plumes used in deer-skin dance of the Karok — California.

SILVA, DR. SIMOENS DA, Rio Janeiro, Brazil.

1 axe, 1 grooved stone implement, 1 pestle of diabase — Brazil (exchange).

SMITH, FRED. M., Chicago.

1 Indian saddle complete with stirrups — Nebraska (exchange).

SMITH, MRS. E. S., Chicago.

Beaded shoulder bag and beaded belt — Ojibway Indians.

SPRAGUE, ALBERT A., 2nd, Chicago.

1 grooved stone axe — Chicago.

STARKEY, MRS. HORACE M., Chicago.

1 feather cape — Sandwich Islands.

DEPARTMENT OF BOTANY

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

AMES, OAKES, North Easton, Mass.

258 herbarium specimens — Philippine Islands (exchange).

ARGENTINE REPUBLIC COMMISSION AT PANAMA-PACIFIC
INTERNATIONAL EXPOSITION, San Francisco, Cal.

18 planks of various woods, 3 Quebracho products, 24 herbarium speci-
mens — Argentine Republic.

BALL, CARLETON R., Washington, D. C.

30 herbarium specimens — various localities.

BRENCKLE, J. F., Chicago.

82 herbarium specimens — various localities.

COPULOS, MILTON D., Chicago.

4 photographs of plant reproductions.

DE SELM, JUDGE ARTHUR W., Kankakee, Ill.

1 herbarium specimen — Illinois.

ELK TANNING COMPANY, Ridgeway, Pa.

7 specimens tan barks — Bahia, Brazil.

FIELD MUSEUM OF NATURAL HISTORY.

Collated by C. F. Millsbaugh:

102 illustrations and descriptions of plants mounted as herbarium specimens.

Collected by O. E. Lansing, Jr., and E. E. Sherff:

92 herbarium specimens — Illinois.

Purchases:

398 herbarium specimens — Alberta, Canada.

485 herbarium specimens — Philippine Islands.

- 371 herbarium specimens — California.
- 151 herbarium specimens — Philippine Islands.
- 335 herbarium specimens — Florida.
- FILEK, FRANK R., Chicago.
 - 46 herbarium specimens — Illinois.
- GAUMER, GEORGE F., Izamal, Yucatan, Mexico.
 - 314 herbarium specimens — Yucatan.
- GRECIAN COMMISSION AT PANAMA-PACIFIC INTERNATIONAL EXPOSITION, San Francisco, Cal.
 - 4 olive products — Greece.
- GRANT, J. M., Sequim, Washington.
 - 76 herbarium specimens — Washington (exchange).
- HALL, ELIHU, FAMILY OF, Athens, Ill.
 - The private herbarium of Elihu Hall.
- HAWLEY, MRS. HELEN D., Cedars, Canada.
 - Her private herbarium — various localities.
- HANSEN, A. A., State College, Pa.
 - 1 herbarium specimen — Pennsylvania.
- HYNES, J. A., Chicago.
 - 1 skeletonized leaf (*Magnolia macrophylla*) — Germany.
- JOHNSON, FRANK W., Chicago.
 - 77 herbarium specimens — Michigan.
- KING, MISS ANNA A., Highland Park, Ill.
 - 397 herbarium specimens — Kentucky.
- MARSH, C. D., Salina, Utah.
 - 3 herbarium specimens — Utah.
- MILLSPAUGH, C. F., Chicago.
 - 30 herbarium specimens — Wisconsin.
 - 9 specimens seeds — market.
 - 2 specimens seeds — various localities.
 - 1 plant description.
 - 1 drawing — seeds of *Salix*.
- MILLSPAUGH, C. F., and LANSING, O. E., JR., Chicago.
 - 22 herbarium specimens — Illinois and Indiana.
- NEW YORK BOTANICAL GARDEN, New York City.
 - 7 photographs of herbarium specimens — Cuba (exchange).
 - 1442 herbarium specimens — various localities (exchange).
- PARISH, S. B., San Bernardino, Cal.
 - 1 herbarium specimen — California.
- PEACOCK, MISS BESS REED, Roswell, New Mexico.
 - 11 herbarium specimens — New Mexico.
- SHERFF, EARL E., Chicago.
 - 25 herbarium specimens — various localities.
- U. S. NATIONAL HERBARIUM, Washington, D. C.
 - 5 photographs of type species — various localities (exchange).
 - 410 herbarium specimens — various localities (exchange).
- UNIVERSITY OF CALIFORNIA, Berkeley, Cal.
 - 129 herbarium specimens — various localities (exchange).

DEPARTMENT OF GEOLOGY

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

ALABASTER ART CO., Chicago.

2 statuettes, plain and bronze finish.

ALEXANDER, W. B., Scales Mound, Ill.

20 specimens vanadinite — near Tucson, Arizona.

AMERICAN BRONZE CO., Berwyn, Pa.

3 specimens bronze — Berwyn, Pa.

AMERICAN COAL PRODUCTS CO., New York City.

Chart showing products derived from coal.

AMERICAN SHEET AND TIN PLATE CO., Chicago.

3 specimens showing manufacture of tin and terne plate.

ARMOUR FERTILIZER WORKS, Chicago.

13 specimens of alunite and products, 2 specimens synthetic nitrogen products — various localities.

ART STONE CO., THE, Waynesboro, Pa.

4 specimens scagliola — Waynesboro, Pa.

AUSTRALIAN COMMISSION AT PANAMA-PACIFIC INTERNATIONAL EXPOSITION, San Francisco, Cal.

61 specimens of ores and minerals — New South Wales.

BARRETT COMPANY, New York City.

1 coal tar "tree."

BASS, W. W., Grand Canyon, Arizona.

3 specimens copper and silver ores, 1 specimen asbestos — Grand Canyon, Ariz.

BOLIVIAN COMMISSION AT PANAMA-PACIFIC INTERNATIONAL EXPOSITION, San Francisco, Cal.

80 specimens ores and minerals — Bolivia.

BRANT, A. J., South Porcupine, Ontario.

1 specimen gold ore — Porcupine District, Ontario.

1 specimen gold ore — Baston Creek, Ontario.

CHAMBER OF COMMERCE, Chloride, Arizona.

75 specimens ores — Chloride District, Ariz.

CHALMERS, W. J., Chicago.

2 tourmaline crystals — Mesa Grande, Cal.

1 specimen crystallized gold — French Guiana.

CHINESE COMMISSION AT PANAMA-PACIFIC INTERNATIONAL EXPOSITION, San Francisco, Cal.

291 specimens ores and minerals and model of Shui Kao Shan lead mining and ore dressing works — China.

CORY, C. B., Chicago.

1 specimen marl — Oconto Co., Wis.

CROWN POINT SPAR CO., Crown Point, N. Y.

4 specimens pegmatite and 6 specimens crushed pegmatite — Essex Co., N. Y.

EMERSON, J. H., Porcupine, Ontario.

1 specimen asbestos — Porcupine District, Ont.

FIELD MUSEUM OF NATURAL HISTORY.

Collected by O. C. Farrington:

- 8 specimens fossil ferns, 24 specimens cone-in-cone, stylolites, etc., 5 specimens hydraulic lime, 2 specimens shale — LaSalle Co., Ill.
- 33 specimens red and green tourmaline, beryl, hercynite, lepidolite, garnet, etc., 18 specimens dendrite on quartz and beryl, 8 specimens concentric weathering, 16 miscellaneous — Oxford Co., Maine.

Collected by H. W. Nichols:

- 1 specimen river pebble — Fox River, Ill.
- 4 specimens quartz veins and 3 specimens rocks — Porcupine District, Ont.
- 19 specimens porphyry copper ores, gypsum, breccia, fossil shells and corals — Arizona and New Mexico.

Purchases:

- 1 meteorite — Plainview, Texas.
- 4 specimens meteorites — various localities.
- 1 iron meteorite — Batavia, N. Y.
- 8 specimens australites — Sydney, Australia.
- 3 specimens agrite — Germany.
- 1 section Cookeville meteorite — Cookeville, Tenn.

FULLER'S EARTH CO., Somerville, Tex.

- 1 specimen fuller's earth — Somerville, Tex.

GALLAGHER, J. F., Chicago.

- 25 specimens mineral abrasives and rocks — various localities.
- 1 specimen fibrous serpentine — Rudolph, Wis.

GARDEN CITY SAND CO., Chicago.

- 1 specimen hydrated lime, 4 specimens cement facings, 1 specimen artificial Caen stone.

GOVERNOR AND COURT OF DIRECTORS, GAS LIGHT AND COKE CO., London, England.

- Collection illustrating by-products of gas manufacture, with case — London, England.

GREEK COMMISSION AT PANAMA-PACIFIC INTERNATIONAL EXPOSITION, San Francisco, Cal.

- 315 specimens ores and mineral products — Greece.

HEATH, C. L., South Porcupine, Ontario.

- 4 specimens gold ore — Tashota, Kowkash District and Swastika, Ont.

HIGMAN, W. G., South Porcupine, Ontario.

- 1 specimen scheelite — Porcupine District, Ont.

HOTCHKIN, M. W., Kirkland Lake, Ontario.

- 1 specimen gold ore — Tough-Oakes Mine, Ont.

HUGHES, ROBERT W., Miami, Arizona.

- 4 specimens chalcocite pseudomorph after pyrite — Miami, Ariz.

INDIANA QUARRIES CO., Bedford, Indiana.

- 4 specimens lime and dressed limestone — Bedford, Ind.

JACKSON, ALLEN W., Temagami, Ontario.

- 1 specimen silver ore — Cobalt, Ont.

JEWELL, FRED, Osborn, Kansas.

- 1 section of ammonite — near Harlan, Kas.

KNIGHT, S. H., Laramie, Wyoming.

- 3 specimens orendite and wyomingite — Leucite Hills, Wyo.

LEEUEWPOORT (AFRICAN FARMS) TIN MINES, LTD.— Leeuwpoort,
Transvaal, South Africa.

3 specimens tin ores — Leeuwpoort, Transvaal, So. Africa.

LONG, TONY, Chicago.

Fossil trilobite — Thornton, Ill.

LOUISVILLE CEMENT CO., Milltown, Indiana.

4 specimens lime and limestone — Milltown, Ind.

MAC DOWELL, C. H., Chicago.

2 specimens molybdenite — Peru.

MARSH, C. H., Marshfield, Oregon.

1 specimen melanterite — Beaver Hill, Ore.

MARTIN, F. E., Chicago.

1 specimen barite — Elizabethtown, Ill.

McALLISTER, MRS. JOHN, North Waterford, Maine.

1 specimen diatomaceous earth — North Waterford, Me.

MESSINA DEVELOPMENT COMPANY, LTD., Messina, Transvaal, South Africa.

3 specimens copper ores — Messina, Transvaal, So. Africa.

MOON, MRS. C. P., Chicago.

15 specimens rocks and minerals—various localities.

MORONEY, JOHN J., Chicago.

2 specimens paper clay — near Macon, Ga.

MOSELEY, E. L., Bowling Green, Ohio.

8 specimens fossil shells, fossil coral, celestite and silver ore — Ohio and Nevada.

NEW ZEALAND COMMISSION AT PANAMA-PACIFIC INTERNATIONAL EXPOSITION, San Francisco, Cal.

Restoration of Moa — New Zealand.

NICHOLAS, DR. F. C., New York City.

2 specimens iron ores — Nogales, Ariz.

NORTON LABORATORIES, INC., Lockport, N. Y.

1 bar metallic magnesium.

PATNAUDE, L. N., Platteville, Wisconsin.

1 specimen zinc ore — Klar-Piquette Mine, Platteville, Wis.

PATTEE, FRED, Chicago.

1 specimen asbestos — near Casper, Wyoming.

PIONEER ASPHALT COMPANY, Lawrenceville, Illinois.

5 specimens asphalt products.

PRUDEN, HARRY B., Chicago.

1 specimen powdered coal — Chicago.

ROBINSON, C. H., Normal, Illinois.

34 specimens wind-polished pebbles — Musk Rat Canyon, Wyo.

RODDY, F. JUSTIN, Millersville, Pa.

13 specimens stream concretions — Little Conestoga Creek, Millersville, Pa. (exchange).

ROOIBERG MINERALS DEVELOPMENT COMPANY, LTD., Rooiberg,
Transvaal, So. Africa.

8 specimens tin ores — Rooiberg, So. Africa.

RUEL, J. G., Chicago.

12 specimens Indiana limestone — Bedford, Ind.

3 specimens soils — near Pensacola, Fla.

SALA, C. A., Chicago.

12 specimens crystallized topaz, transparent beryl, crystallized tourmaline
— Mesa Grande, Cal.

SALISBURY, R. D., Chicago.

47 specimens fossil shells — Piedra del Aquila, Neugnen, Patagonia.

SCHROTT, FRED L., Salt Lake City, Utah.

2 specimens gold ore and 1 specimen cinnabar — Stanley, Idaho.

SHNABLE AND QUINN, Blue Island, Ill.

1 specimen orthoceras annulatum, 1 specimen cyrtoceras — Blue Island,
Ill.

SPRAGUE, ALBERT A., II, AND PORTER, GEORGE F., Chicago.

150 specimens wind-polished pebbles — Musk Rat Canyon, Wyo.

STE. GENEVIEVE LIME COMPANY, St. Louis, Mo.

3 specimens lime and limestone — Ste. Genevieve, Mo.

THURSTON, DR. FREDUS A., Chicago.

1 specimen stratified clay — Parry Sound, Ont.

TITANIUM ALLOY MANUFACTURING COMPANY, Niagara Falls, New
York.

2 specimens ferro-titanium alloys, 1 specimen metallic titanium.

TRANSSAAL CONSOLIDATED LAND AND EXPLORATION COMPANY,
LTD., Johannesburg, So. Africa.

9 specimens tin ores — Mbabane, Swaziland, So. Africa.

U. S. NATIONAL MUSEUM, Washington, D. C.

1 etched section of Dalton meteorite — Dalton, Ga. (exchange).

71 grams Lake Okechobee meteorite — Lake Okechobee, Fla. (exchange).

UNITED STATES TUNGSTEN CORPORATION, Ely, Nevada.

1 specimen rich tungsten ore — Ely, Nev.

WESTON, RALPH C., Los Angeles, Cal.

1 specimen gold ore — Oatman District, Ariz.

9 specimens rocks and minerals — Oatman District, Ariz.

WHITEHALL, C. C., Silver City, New Mexico.

4 specimens invertebrate fossils — Silver City, New Mexico.

WISCONSIN ZINC COMPANY, Platteville, Wis.

2 specimens blende and galena — Empire Mine, Platteville, Wis.

WOODVILLE LIME AND CEMENT COMPANY, Toledo, Ohio.

3 specimens limestone and lime — Woodville, Ohio.

ZAAIPLAATS TIN MINING COMPANY, LTD., Sterkwater, Potgietersrust,
Transvaal, So. Africa.

16 specimens tin ores — Sterkwater, Potgietersrust, Transvaal, So. Africa.

DEPARTMENT OF ZOÖLOGY

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

ARGENTINE COMMISSION, PANAMA-PACIFIC INTERNATIONAL
EXPOSITION, San Francisco, Cal.

76 birds, 1 mammal — Argentina, So. Amer.

57 mammal skins — Argentina, So. Amer.

AVINOFF, ANDREW, New York City.

17 butterflies — Kashmir, India (exchange).

BARNES, JUDGE R. M., Lacon, Ill.

1 Blue Goose.

BRANDLER, CHARLES, Chicago.

1 weasel, with skull — North Branch, Lake Co., Minn.

CHAVES, DIOCLECIANO, Managua, Nicaragua.

152 butterflies and moths — Managua, Nicaragua.

CLARK, B. PRESTON, Boston, Mass.

63 Hawk moths — various localities (exchange).

COLLINS-DAY EXPEDITION.

215 bird skins — South America.

DERBY, W. M., Chicago.

1 hybrid duck.

DOHMEN, U. A., Chicago.

1 scorpion — Chicago.

ECKSTROM, FANNIE H., Brewer, Me.

1 Star-nosed Mole.

EVANS, CHARLES L., Chetek, Wis.

1 Star-nosed Mole — Wisconsin.

FARRINGTON, O. C., Chicago.

8 specimens shells (16-valves) — Lake Keewardin, Stoneham, Me.

FIELD MUSEUM OF NATURAL HISTORY.

Purchases:

1 Alaska red fox.

1 egg, *Aepyornis maximus* — Madagascar.

113 mammals (skins and skulls), 22 mammals in alcohol — Bolivia.

175 bird skins — various parts of Europe.

3 weaver birds' nests — Ambala, The Punjab, British India.

3 prairie hares — Kansas.

FRIESSER, JULIUS, Chicago.

1 Long-billed Marsh Wren (*Telmatodytes palustris*) — Chicago.

GETZ, GEORGE F., Chicago.

1 dromedary — Damascus.

GUNDER, J. D., Chicago.

1 horn-tail — Yellowstone National Park.

HARRIS, N. W., PUBLIC SCHOOL EXTENSION OF FIELD MUSEUM,
Chicago.

42 flies, beetles, sawflies and gall insects — Northern Indiana and Illinois.

HILL, CHARLES A., San Francisco, Cal.

1 beetle and 1 velvet-ant — Los Angeles and Orange Co., Park, Cal.

LAUFER, BERTHOLD, Chicago.

2 beetles — China.

LEOPOLD, N., JR., Chicago.

1 praying-mantis — Elkins Park, Virginia.

LILJEBLAD, E., Chicago.

8 moths and beetles — Northern Illinois and Indiana.

LINCOLN PARK ZOO, Chicago.

1 mandrill.

- MAIN, W. W., Maryhill, Washington.
1 nighthawk and cliff swallow's nest and eggs — Maryhill, Wash.
- McGRANER, A. C., Ancon, Panama.
1 scorpion and 5 snakes — head waters of Chagres River, Panama.
- OWEN, CHARLES L., Chicago.
9 beetles — Chicago.
- OWEN, V. W., Los Angeles, Cal.
14 dragonflies, bugs, grasshopper and katydid — Cochise Co., Ariz.
- PRAY, L. L., Chicago.
1 raccoon and one black squirrel (exchange).
- SKINNER, MRS. JANE B., Chicago.
1 mounted peacock.
- SODERBERG, MISS ELSIE, Chicago,
1 King Rail — Chicago.
- STAUFFER, D. L., Chicago.
1 Diamond rattlesnake — near San Antonio, Tex.
- STODDARD, H. L., Chicago.
1 Long-tailed Jaeger — Dune Park, Porter Co., Ind.
3 cicadas — Miller, Indiana.
- STUMP, MRS. H. E., Chicago.
2 mounted California quail.
- WALKER, ERNEST P., Wrangell, Alaska.
37 Alaskan mammals (exchange).
- WALTERS, L. L., Chicago.
1 chipmunk — near Jordan, Montana.
- WEBER, C. M., Balabac, P. I.
1 mouse deer and one civet — Philippine Islands.
- WILLARD, F. C., Tombstone, Ariz.
1 skin of fawn of white-tailed deer — near Tombstone, Arizona.
1 assassin bug — Tombstone, Arizona.
- WILLIAMSON, E. B., Bluffton, Ind.
2 Great-horned Owls and 1 Red-tailed Hawk.
- WOLCOTT, A. B., Chicago.
1 fly and 1 bug — Chicago.
- WOODBURY, FRANCES S., Chicago.
1 alligator and 1 fish — Florida.

SECTION OF PHOTOGRAPHY

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FIELD MUSEUM OF NATURAL HISTORY.

Made by the Section:

292 negatives of Museum specimens, etc., 860 prints and lantern slides.

GUNSAULUS, FRANK W., Chicago.

1796 negatives of sword guards.

NICKERSON, MISS G., Pasadena, Calif.

20 photographs of California Indians.

THE LIBRARY

BOOKS, PAMPHLETS, AND SERIALS

(ACCESSIONS ARE BY EXCHANGE UNLESS OTHERWISE DESIGNATED)

ALABAMA

Geological Survey, University 2

ARIZONA

Agricultural Experiment Station, Tucson 2

CALIFORNIA

Agricultural Experiment Station, Berkeley 2

California Academy of Sciences, San Francisco 2

California State Board of Forestry, Sacramento 1

California University, Berkeley 13

Cooper Ornithological Club, Hollywood 2

Leland Stanford Junior University, Stanford University 2

Lorquin Natural History Club, Los Angeles 4

Panama Pacific International Exposition, San Francisco (gift) 100

Pioneer Western Lumberman, Sacramento (gift) 1

Pomona College, Claremont 1

San Diego Society of Natural History 1

Southern California Academy of Sciences, Los Angeles 1

State Mining Bureau, Sacramento 6

COLORADO

Agricultural Experiment Station, Fort Collins 11

Colorado College, Colorado Springs 2

Colorado Geological Survey, Boulder 8

Colorado Museum of Natural History, Denver 2

Colorado School of Mines, Golden 10

Colorado Scientific Society, Denver 2

State Historical and Natural History Society, Denver 1

CONNECTICUT

Agricultural Experiment Station, New Haven 5

American Oriental Society, New Haven 1

Connecticut Academy of Arts and Sciences, New Haven 2

Hartford Public Library 2

State Forester, Hartford 1

Wadsworth Athenaeum, Hartford 1

Yale University, New Haven 4

DELAWARE

Agricultural Experiment Station, Newark 1

FLORIDA

Agricultural Experiment Station, Tallahassee 4

State Geological Survey, Tallahassee 1

GEORGIA

Geological Survey, Atlanta 1

HAWAIIAN ISLANDS

Agricultural Experiment Station, Honolulu 2

Bernice Pauahi Bishop Museum, Honolulu 2

Board of Agriculture and Forestry, Honolulu 1

IDAHO

Inspector of Mines, Boise	1
University of Idaho, Moscow	1

ILLINOIS

Art Institute of Chicago	2
Cement World Publishing Company, Chicago (gift)	1
Chicago Historical Society	1
Chicago Public Library	2
Dial Publishing Company, Chicago	2
Forest and Stream Publishing Company, Chicago	2
Hardwood Record, Chicago (gift)	2
Illinois Audubon Society, Chicago (gift)	1
Inland Printer Publishing Company, Chicago	2
John Crerar Library	1
Kenfield-Leach Company, Chicago	2
Lake Forest College	1
Lewis Institute, Chicago	1
Mining World Publishing Company	2
Newberry Library, Chicago	1
Open Court Publishing Company, Chicago	1
Peoria Public Library	1
Special Park Commission, Chicago	1
State Board of Agriculture, Springfield	4
State Entomologist, Springfield	2
State Geological Survey, Urbana	2
State Historical Library, Springfield	3
State Laboratory of Natural History, Urbana	2
University of Chicago	5
University of Illinois, Urbana	10

INDIANA

Department of Geology and Natural Resources, Indianapolis	1
Indiana Academy of Science, Indianapolis	1
John Herron Art Institute, Indianapolis	2
Notre Dame University	1
Purdue University, Lafayette	10
State Board of Forestry, Indianapolis (gift)	1

IOWA

Iowa State Horticultural Society, Des Moines	1
State College of Agriculture, Ames	1
State Historical Department, Des Moines	1
University of Iowa, Iowa City	2

KANSAS

Agricultural Experiment Station, Manhattan	8
State Board of Agriculture, Topeka	4
State Historical Society, Topeka	1

KENTUCKY

Agricultural Experiment Station, Lexington	4
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LOUISIANA

Agricultural Experiment Station, Baton Rouge	6
Commission Panama-Pacific International Exposition, Baton Rouge	1

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Commissioner of Agriculture and Immigration, Baton Rouge	1
Louisiana Historical Society, New Orleans (gift)	1
Louisiana State Museum, New Orleans	1
MAINE	
Agricultural Experiment Station, Orono	4
Bowdoin College, Brunswick	1
Portland Public Library	1
MARYLAND	
Agricultural Experiment Station, College Park	1
Enoch Pratt Free Library, Baltimore	2
Geological Survey, Baltimore	2
Johns Hopkins University, Baltimore	1
Maryland Physiological Researches, Baltimore	1
State Board of Forestry, Baltimore	1
State Horticultural Society, College Park	2
MASSACHUSETTS	
Agricultural Experiment Station, Amherst	8
American Academy of Arts and Sciences, Boston	28
American Antiquarian Society, Boston	2
Amherst College	1
Archæological Institute of America, Boston	1
Boston Museum of Fine Arts	2
Boston Public Library	1
Boston Society of Natural History	1
Cambridge Public Library	1
Clark University, Worcester	1
Essex Institute, Salem	2
Harvard College, Cambridge	2
Harvard Museum of Comparative Zoology, Cambridge	2
Horticultural Society, Boston	2
Institute of Technology, Boston	1
New Bedford Free Public Library	2
Peabody Institute, Peabody	1
Peabody Museum, Cambridge	2
Peabody Museum, Salem	1
Phillips Academy, Andover	1
Salem Public Library	2
Springfield Library Association	1
Springfield Natural History Museum	1
Tufts College, Boston	4
United Shoe Machinery Company, Beverly (gift)	4
Williams College, Williamstown	2
Worcester Free Public Library	1
MICHIGAN	
Academy of Sciences, Ann Arbor	1
Agricultural Experiment Station, Agricultural College	6
Department of Parks and Boulevards, Detroit	3
Detroit Museum of Art	1
Geological and Biological Survey, Lansing	3

Grand Rapids Public Library	2
Michigan College of Mines, Houghton	1
National Educational Association of the United States, Ann Arbor	1
State Board of Agriculture, Lansing	1
University of Michigan, Ann Arbor	3
MINNESOTA	
Agricultural Experiment Station, St. Paul	6
Minneapolis Historical Society, St. Paul	2
Minnesota Geological Survey, Minneapolis	1
St. Paul Institute (gift)	1
University of Minnesota, Minneapolis	3
MISSISSIPPI	
Agricultural Experiment Station, Agricultural College	1
Mississippi Geological Survey, Jackson	2
MISSOURI	
Agricultural Experiment Station, Columbia	6
Bureau of Geology and Mines, Jefferson City	2
City Art Museum, St. Louis	2
Missouri Botanical Garden, St. Louis	1
St. Louis Academy of Sciences	1
St. Louis Mercantile Library Association	1
St. Louis Public Library	2
St. Louis University	1
State Historical Society, Columbia	2
Washington University, St. Louis	1
MONTANA	
Agricultural Experiment Station, Bozeman	1
Montana State University, Missoula	1
NEBRASKA	
Agricultural Experiment Station, Lincoln	2
University of Nebraska, Lincoln	2
NEW HAMPSHIRE	
College of Agriculture, Durham	4
NEW JERSEY	
Agricultural Experiment Station, Trenton	8
Craftsman, Eastwood (gift)	2
Department of Conservation and Development, Trenton	1
New Jersey Horticultural Society, Trenton	1
Newark Museum Association (gift)	8
Newark Public Library	1
State Museum, Trenton	2
Stevens Institute of Technology, Hoboken	1
NEW MEXICO	
Agricultural Experiment Station, Mesilla Park	3
Museum of New Mexico, Santa Fé	1
State School of Mines, Socorro	1
NEW YORK	
Agricultural Experiment Station, Geneva	6
American Geographical Society, New York City	2

124 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

American Institute of Mining Engineers, New York City	2
American Museum of Natural History, New York City	23
Brooklyn Botanic Garden	12
Brooklyn Institute of Arts and Sciences	4
Buffalo Historical Society	1
Buffalo Public Library	1
Buffalo Society of Natural History	1
Carnegie Foundation for the Advancement of Teaching, New York City	1
Columbia University, New York City	1
Cornell University, Ithaca	2
Conservation Commission, Albany	1
Forestry Quarterly, Ithaca	1
Japan Society, New York City (gift)	1
Lake Mohonk Conference of International Arbitration	1
Metropolitan Museum of Art, New York City	2
Munn and Company, New York City (gift)	2
Museum of the American Indian, New York City	3
National Association of Audubon Societies, New York City	1
New York Academy of Sciences, New York City	1
New York Botanical Garden, New York City	1
Pratt Institute Free Library, Brooklyn	2
Public Library, New York City	1
Rockefeller Foundation, New York City	1
State College of Forestry, Syracuse	3
State Library, Albany	9
Staten Island Association of Arts and Sciences, New York City	2
Zoological Society, New York City	3
NORTH CAROLINA	
Agricultural Experiment Station, Raleigh	2
Elisha Mitchell Scientific Society, Chapel Hill	1
Geological and Economic Survey, Raleigh	2
NORTH DAKOTA	
University of North Dakota, University	1
OHIO	
Agricultural Experiment Station, Wooster	14
Cincinnati Museum Association	2
Cleveland Museum of Art	1
Cleveland Public Library	2
Denison University, Granville	1
Geological Survey, Columbus	1
Lloyd Library, Cincinnati	2
Marietta College	1
Oberlin College	1
Ohio State Academy of Science, Columbus	1
State Archaeological and Historical Society, Columbus	1
State University, Columbus	15
University of Cincinnati	2
Wilson Ornithological Club, Oberlin	1
OKLAHOMA	
Agricultural Experiment Station, Stillwater	3

OREGON

Agricultural Experiment Station, Corvallis (gift)	5
Fish and Game Commission, Corvallis	3
Timberman, Portland (gift)	1

PENNSYLVANIA

Agricultural Experiment Station, Harrisburg	1
American Entomological Society, Philadelphia	6
American Journal of Pharmacy, Philadelphia	1
American Philosophical Society, Philadelphia	1
Association of Engineering Societies, Philadelphia	2
Bryn Mawr College	1
Carnegie Institute, Pittsburgh	2
Carnegie Library, Pittsburgh	4
Carnegie Museum, Pittsburgh	14
Delaware County Institute of Science, Media	1
Engineers' Society of Western Pennsylvania, Pittsburgh	2
Franklin Institute, Philadelphia	2
Pennsylvania Museum and School of Industrial Art, Philadelphia	1
Philadelphia Academy of Natural Sciences	1
Philadelphia College of Physicians	1
Philadelphia Commercial Museum	1
Philadelphia Numismatics and Antiquarian Society	1
State Department of Agriculture, Harrisburg	3
United States Indian School, Carlisle	2
University of Pennsylvania, Philadelphia	2
Wagner Free Institute of Science, Philadelphia	1
Wistar Institute of Anatomy and Biology, Philadelphia	6
Wyoming Historical and Geological Society, Wilkes-Barre	1

PHILIPPINE ISLANDS

Bureau of Education, Manila	5
Department of the Interior, Bureau of Science, Manila	8
Philippine Library, Manila	1

RHODE ISLAND

Providence Public Library	1
Roger Williams Park Museum, Providence	1

SOUTH CAROLINA

Charleston Museum	1
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TENNESSEE

Agricultural Experiment Station, Nashville	2
State Board of Entomology, Nashville	1

TEXAS

International Society of Archaeologists, Hico	2
Scientific Society, San Antonio	1
Texas Folklore Society, Austin	1
University of Texas, Austin	1

VERMONT

University of Vermont, Burlington	3
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VIRGINIA

Agricultural Experiment Society, Blacksburg	1
Geological Survey, Charlottesville	2

126 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

University of Virginia, Charlottesville	1
Virginia State Library, Richmond	1
WASHINGTON	
State Library, Seattle	3
WASHINGTON D. C.	
Biological Society	1
National Academy of Sciences	2
National Geographic Society	2
Pan American Union	2
United States Government	597
WEST VIRGINIA	
Agricultural Experiment Station, Morgantown	2
University of West Virginia, Morgantown	1
WISCONSIN	
Archæological Society, Milwaukee	1
Beloit College	2
Geological and Natural History Survey, Madison	15
Milwaukee Public Museum	1
Natural History Society, Madison	1
State Historical Society, Madison	1
University of Wisconsin, Madison	4
WYOMING	
Agricultural Experiment Station, Laramie	1
Adams, Charles C., Syracuse, New York	1
Ames, Oakes, North Easton, Massachusetts (gift)	4
Atkinson, George F., Ithaca, New York	1
Atwater, C. G., New York City (gift)	1
Ayer, Mrs. Edward E., Chicago (gift)	1
Ayer, Edward E., Chicago (gift)	2
Bingham, Hiram, New Haven, Connecticut	2
Blatchley, William S., Indianapolis, Indiana	1
Boas, Franz, New York City	4
Casey, Thomas L., Washington, D. C.	2
Chalmers, William J., Chicago (gift)	6
Clute, Willard N., Joliet, Illinois	2
Cockerell, T. D. A., Boulder, Colorado	7
Cole, Fay-Cooper, Chicago	1
Conklin, Edwin Grant, Princeton, New Jersey	1
Cook, Melville T., New Brunswick, New Jersey	5
Cummings, E. R., Bloomington, Indiana (gift)	1
Curtiss, Samuel W., Chicago (gift)	1
Dietz, Harry T., Indianapolis, Indiana (gift)	1
Evans, Alexander W., New Haven, Connecticut	6
Farrington, Oliver C., Chicago	1
Farwell, Oliver A., Detroit, Michigan	4
Fernald, Merritt L., Cambridge, Massachusetts	2
Field, Marshall, Chicago (gift)	1
Freer, Charles L., Detroit, Michigan (gift)	1
Gerhard, William J., Chicago	12

Gunsaulus, Frank W., Chicago (gift)	34
Hall, Ivan C., Berkeley, California	5
Lamb, D. S., Washington, D. C. (gift)	1
Laufer, Berthold	10
Le Baron, Francis, Austin, Texas (gift)	1
Magee, Charles H., Manila, Philippine Islands (gift)	1
Mayer, Alfred G., Washington, D. C.	1
Meyer, K. F.	1
Millsbaugh, Charles F., Chicago	101
Montané, Louis, Havana, Cuba (gift)	2
Moore, Clarence B., Philadelphia, Pennsylvania	2
Morse, Edward S., Salem, Massachusetts	1
Muttkowski, Richard, Milwaukee, Wisconsin (gift)	1
Nichols, Henry W., Chicago	4
Osborn, Henry Fairfield, New York City (gift)	3
Simms, Stephen C., Chicago	10
Smith, John D., Washington, D. C.	1
Stewart, V. B., Ithaca, New York	4
Taubenhaus, J. J., Newark, Delaware	2
Todd, W. E. Clyde, Pittsburgh, Pennsylvania	4
Trelease, William, Urbana, Illinois	1
Weld, Lewis W., Chicago (gift)	3

AFRICA

Durban Museum	3
Geological Society, Johannesburg	1
South African Museum, Cape Town	2
Union of South Africa, Department of Agriculture, Pretoria	1

ARGENTINA

Museo de Farmacologia, Buenos Aires	4
Museo de La Plata	1
Museo Nacional, Buenos Aires	1

AUSTRALIA

Australian Museum, Sydney	3
Australian Ornithologists' Union, Melbourne	1
Botanic Gardens and Government Domains, Sydney	2
Department of Agriculture, Adelaide	2
Department of Agriculture, Hobart, Tasmania	1
Department of Agriculture, Melbourne	1
Department of Agriculture, Sydney	2
Department of Fisheries, Sydney	1
Department of Mines, Sydney	4
Field Naturalists' Club, Melbourne	1
Geological Survey, Perth	3
Government of the Commonwealth, Melbourne	2
Linnean Society of New South Wales, Sydney	1
Public Library, Museum and Art Gallery, Adelaide	1
Royal Society of New South Wales, Sydney	1
Royal Society of South Australia, Adelaide	1
South Australian Ornithological Association, Adelaide	1

128 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

Technical Museum, Sydney	4
Western Australian Museum and Art Gallery, Perth	1
BOHEMIA	
Naturwissenschaftliche Landesforschung für Böhmen, Prague	1
BRAZIL	
Bibliotheca Nacional, Rio de Janeiro	2
Instituto Agronomico de Estado, Sao Paulo	1
Instituto Archeologico e Geographico Pernambucano, Recife (gift)	1
Museu Nacional, Rio de Janeiro	1
CANADA	
Department of Agriculture, Ottawa	16
Department of Agriculture, Victoria	2
Department of Marine and Fisheries, Ottawa	2
Department of Mines, Ottawa	2
Department of Mines, Victoria	1
Department of the Interior, Geological Survey, Ottawa	17
Entomological Society of Ontario, Toronto	1
Minister of Education, Toronto	1
Natural History Society of New Brunswick, St. John	1
Naturaliste Canadien, Quebec	1
Nova Scotian Institute of Science, Halifax	1
Numismatic and Antiquarian Society, Montreal	1
Ottawa Field Naturalists' Club, Ottawa	1
Provincial Museum, Victoria	2
Royal Canadian Institute, Toronto	15
University of Toronto	3
CENTRAL AMERICA	
Museo Nacional de Nicaragua, Managua	1
CEYLON	
Colombo Museum	2
Royal Botanic Garden, Peradeniya	1
CHILE	
Biblioteca Nacional, Santiago	3
CHINA	
Botanical and Forestry Department, Hong Kong	1
Royal Asiatic Society, North China Branch, Shanghai	3
DENMARK	
Académie Royale des Sciences et des Lettres de Danemark, Copenhagen	1
K. Danske Videnskabernes Selskab, Copenhagen	1
Naturhistorisk Forening, Copenhagen	2
Société Botanique de Copenhagen	2
University, Zoological Museum, Copenhagen	1
EGYPT	
Institut Egyptien, Cairo	1
Survey Department, Cairo	1
ENGLAND	
Anthropological Institute of Great Britain and Ireland, London	1
Ashmolean Natural History Society of Oxfordshire, Oxford	1
Bristol Museum and Art Gallery	1
British Association for the Advancement of Science, London	2

British Museum (Natural History), London	7
Cambridge Antiquarian Society	1
Cambridge Philosophical Society	1
Cambridge University Library	18
Cardiff Naturalists' Society	2
Dove Marine Laboratory, Cullercoats, Northumberland	1
Free Public Museum, Liverpool	1
Great Britain Geological Survey, London	1
Imperial Bureau of Entomology, London	2
Imperial College of Science and Technology, London	1
Lancashire Sea Fisheries Laboratory, Liverpool	1
Linnean Society, London	3
Liverpool Biological Society	1
Liverpool Marine Biological Station	1
Manchester Field Naturalists' and Archaeologists' Society	1
Oxford Delegates of University Museum	1
Royal Botanic Gardens, Kew	2
Royal Geographical Society, London	2
Royal Horticultural Society, London	1
Royal Society, London	2
Royal Society of Arts, London	2
South London Entomological and Natural History Society, London	1
Tring Zoological Museum	1
Wellcome Historical Medical Museum, London	2
FRANCE	
Académie des Sciences, Paris	2
Ecole d'Anthropologie, Paris	1
La Nature, Paris	2
Société de Géographie, Toulouse	1
Société des Sciences Naturelles, La Rochelle	2
Société Nationale d'Agriculture, Paris	1
GERMANY	
Deutsche Gesellschaft für Anthropologie, Ethnologie und Urga., Berlin	1
Deutsche Morganländische Gesellschaft, Halle	23
Geographische Gesellschaft, Munich	1
Gesellschaft für Erdkunde, Leipzig	1
K. Bibliothek, Berlin	1
K. Museum für Völkerkunde, Berlin	2
K. Sammlungen für Kunst und Wissenschaft, Dresden	2
Naturwissenschaftlicher Verein für Schleswig-Holstein, Kiel	1
Naturwissenschaftliche Wochenschrift, Jena	1
Städtisches Museum für Völkerkunde, Leipzig	1
Universitäts Bibliothek, Giessen	5
Verein für Vaterländische Naturkunde in Württemberg, Stuttgart	1
Verein für Volkskunde, Berlin	1
INDIA	
Anthropological Society, Bombay	1
Archæological Survey, Burma	1
Archæological Survey, Calcutta	6
Archæological Survey, Peshawar	1

130 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

Colony of Mauritius	1
Department of Agriculture, Bombay	1
Department of Agriculture, Madras	1
Department of Agriculture, Pusa	1
Geological Survey, Calcutta	3
Government Museum, Madras	4
Indian Museum, Calcutta	8
National Indian Association, Calcutta (gift)	1
Royal Asiatic Society of Bengal, Calcutta	9
Royal Asiatic Society, Straits Branch, Singapore	17
Royal Botanic Gardens, Calcutta	3
Superintendent of Government Printing, Calcutta	3
IRELAND	
Royal Dublin Society	2
Royal Irish Academy, Dublin	2
ITALY	
American Society, Rome	1
Istituto Zoologico, Naples	1
Museo Civico di Storia Naturale, Genoa	1
R. Accademia delle Scienze, Turin	2
R. Scuola Superiore d'Agricoltura, Portici	3
R. Università Museo Zoologico, Naples	1
Società dei Naturalisti, Naples	1
Società Geografica Italiana, Rome	2
Società Geologia Italiana, Rome	1
Società Italiana di Antropologia, Florence	1
Società Italiana di Scienze Naturali, Milan	1
Società Romana di Antropologia, Rome	1
Società Toscana di Scienze Naturali, Pisa	1
Università Pavia. Istituto Botanico, Milan	1
JAPAN	
Anthropological Society of Tokyo	1
Bureau of Productive Industry Formosa Government, Taihoku	1
Geological Survey, Tokyo	2
Imperial University of Tokyo, College of Science	3
Tokyo Botanical Society	1
JAVA	
Bataviaasch Genootschap van Kunsten Wetenschappen, Batavia	2
Department of Agriculture, Buitenzorg	8
Jardin Botanique, Buitenzorg	1
MEXICO	
Instituto Biologico, Mexico	9
Instituto Geologico, Mexico	4
Sociedad Cientifica "Antonio Alzate," Mexico	1
NETHERLANDS	
Rijks Ethnographisch Museum, Leiden	2
Rijks Museum van Natuurlijke Historie, Leiden	2
Rijks Geologisch Mineralogisch Museum, Leiden	1
Stads Bibliotheek, Haarlem	1

NEW ZEALAND

Auckland Institute and Museum, Wellington	1
Department of Agriculture, Wellington	3
Department of Mines, Wellington	4
Dominion Museum, Wellington	1

PERU

Cuerpo de Ingenieros de Minas, Lima	1
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SCOTLAND

Dumfriesshire and Galloway Natural History and Antiquarian Society, Dumfries	1
Fisheries Board, Edinburgh	2
Geological Society, Edinburgh	1
Royal Botanic Society, Edinburgh	1
Royal Society, Edinburgh	2

SPAIN

Instituto Nacional de Ciencias Fisico-Naturales, Madrid	3
Junta de Ciencias Naturales, Barcelona	1
Museo de Ciencias Naturales, Madrid	1
R. Academia de Ciencias, Madrid	2
Sociedad Española de Historia Natural, Madrid	2

SWEDEN

K. Biblioteket, Stockholm	3
K. Svenska Vetenskapsakademien, Stockholm	1
K. Vitt. Hist. och Antik. Akademien, Stockholm	1
Svenska Sällskapet för Antropologi och Geografi, Stockholm Upsala University	1

SWITZERLAND

Geographisch-Ethnographische Gesellschaft, Zürich	1
Musée d'Histoire Naturelle, Lausanne	1
Musée Ethnographique, Neuchatel	1
Musée Zoologique, Lausanne	1
Naturforschende Gesellschaft, Basel	1
Ostschweizerische Geograph.-Commerc. Gesellschaft, St. Gallen	1
Société de Physique et d'Histoire Naturelle, Geneva	2
Société des Sciences Naturelles, Fribourg	1
Société Neuchateloise de Géographie	2
Universität, Bern	8

WEST INDIES

Agricultural Experiment Station, Porto Rico	1
Biblioteca Nacional, Havana	1
Department of Agriculture, Kingston	1
Estacion Central Agronomico, Santiago de las Vegas	2
Imperial Department of Agriculture, Barbadoes	2
Jamaica Institute, Kingston	1
Trinidad and Tobago Department of Agriculture, Port of Spain	2
Universidad de la Habana, Havana	2

Brazil, Vital, Sao Paulo, Brazil (gift)	1
Codazzi, Ricardo L., Bogota, Colombia	2
Carpenter, G. H., Dublin, Ireland	1

132 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

Caziot, E., Paris, France (gift)	1
Chodat, R., Geneva, Switzerland	17
Dunod, H., Paris, France	4
Haddon, Alfred C., London, England	1
Heim, Albert, Zürich, Switzerland	3
Lambe, L. M., Ottawa, Ontario	1
Morice, R. L., Paris, France	1
Northcote, Thomas W., London, England (gift)	3
Outes, Felix F., Buenos Aires, Argentina	1
Richter, Rudolf, Frankfurt-a-M., Germany	4
Sapir, Edward, Ottawa, Canada	1
Sergi, G., Rome, Italy	1
Simoens da Silva, Antonio Carlos, Rio de Janeiro, Brazil	3
Wülfing, E. A., Heidelberg, Germany	3

ARTICLES OF INCORPORATION

STATE OF ILLINOIS.

DEPARTMENT OF STATE.

WILLIAM H. HINRICHSSEN, *Secretary of State.*

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

Whereas, a Certificate duly signed and acknowledged having been filed in the office of the Secretary of State, on the 16th day of September, A. D., 1893, for the organization of the COLUMBIAN MUSEUM OF CHICAGO, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereto attached.

Now, therefore, I, William H. Hinrichsen, Secretary of State of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said COLUMBIAN MUSEUM OF CHICAGO is a legally organized Corporation under the laws of this State.

In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of the State. Done at the City of Springfield, this 16th day of September, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the United States the one hundred and eighteenth.

W. H. HINRICHSSEN,
Secretary of State.

[SEAL.]

TO HON. WILLIAM H. HINRICHSSEN,

SECRETARY OF STATE:

SIR:

We, the undersigned citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and that for the purposes of such organization we hereby state as follows, to wit:

1. The name of such corporation is the "COLUMBIAN MUSEUM OF CHICAGO."

2. The object for which it is formed is for the accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating Art, Archeology, Science, and History.

3. The management of the aforesaid Museum shall be vested in a Board of FIFTEEN (15) TRUSTEES, five of whom are to be elected every year.

4. The following named persons are hereby selected as the Trustees for the first year of its corporate existence:

134 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

Edward E. Ayer, Charles B. Farwell, George E. Adams, George R. Davis, Charles L. Hutchinson, Daniel H. Burnham, John A. Roche, M. C. Bullock, Emil G. Hirsch, James W. Ellsworth, Allison V. Armour, O. P. Aldis, Edwin Walker, John C. Black, and Frank W. Gunsaulus.

5. The location of the Museum is in the City of Chicago, County of Cook, and State of Illinois.

(Signed),

George E. Adams, C. B. Farwell, Sidney C. Eastman, F. W. Putnam, Robert McMurdy, Andrew Peterson, L. J. Gage, Charles L. Hutchinson, Ebenezer Buckingham, Andrew McNally, Edward E. Ayer, John M. Clark, Herman H. Kohlsaat, George Schneider, Henry H. Getty, William R. Harper, Franklin H. Head, E. G. Keith, J. Irving Pearce, Azel F. Hatch, Henry Wade Rogers, Thomas B. Bryan, L. Z. Leiter, A. C. Bartlett, A. A. Sprague, A. C. McClurg, James W. Scott, George F. Bissell, John R. Walsh, Chas. Fitzsimons, John A. Roche, E. B. McCagg, Owen F. Aldis, Ferdinand W. Peck, James H. Dole, Joseph Stockton, Edward B. Butler, John McConnell, R. A. Waller, H. C. Chatfield-Taylor, A. Crawford, Wm. Sooy Smith, P. S. Peterson, John C. Black, Jno. J. Mitchell, C. F. Gunther, George R. Davis, Stephen A. Forbes, Robert W. Patterson, Jr., M. C. Bullock, Edwin Walker, George M. Pullman, William E. Curtis, James W. Ellsworth, William E. Hale, Wm. T. Baker, Martin A. Ryerson, Huntington W. Jackson, N. B. Ream, Norman Williams, Melville E. Stone, Bryan Lathrop, Eliphalet W. Blatchford, Philip D. Armour.

STATE OF ILLINOIS }
COOK COUNTY } ss.

I, G. R. MITCHELL, a NOTARY PUBLIC in and for said County, do hereby certify that the foregoing petitioners personally appeared before me and acknowledged severally that they signed the foregoing petition as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this 14th day of September, 1893.

G. R. MITCHELL,
[SEAL.] NOTARY PUBLIC, COOK COUNTY, ILL.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the Corporate members held the 25th day of June, 1894, the name of the COLUMBIAN MUSEUM was changed to FIELD COLUMBIAN MUSEUM. A certificate to this effect was filed June 26, 1894, in the office of the Secretary of State for Illinois.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the Corporate members held the 8th day of November, 1905, the name of the FIELD COLUMBIAN MUSEUM was changed to FIELD MUSEUM OF NATURAL HISTORY. A certificate to this effect was filed November 10, 1905, in the office of the Secretary of State for Illinois.

AMENDED BY-LAWS.

(JUNE 12, 1916.)

ARTICLE I.

MEMBERS.

SECTION 1. Members shall be of five classes, Annual Members, Corporate Members, Life Members, Patrons, and Honorary Members.

SEC. 2. Annual members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of ten dollars (\$10.00), payable within thirty days after notice of election, and within thirty days after each recurring annual date. The failure of any person to make such initiatory payment and such annual payments within said time shall, at the option of the Board of Trustees, be sufficient grounds for the forfeiture of an annual membership.

This said annual membership shall entitle the member to:

First.— Free admittance for the member and family, to the Museum on any day.

Second.— Ten tickets every year, admitting the bearer to the Museum on pay days.

Third.— A copy of all publications of the Museum when requested.

Fourth.— Invitations to all special exhibits, receptions, lectures, or other functions which may be given at the Museum.

SEC. 3. The Corporate Members shall consist of the persons named in the articles of incorporation, and of such other persons as shall be chosen from time to time by the Board of Trustees at any of its meetings, upon the recommendation of the Executive Committee; provided, that such persons named in the articles of incorporation shall, within ninety days from the adoption of these By-Laws, and persons hereafter chosen as Corporate Members shall, within ninety days of their election, pay into the treasury the sum of twenty dollars (\$20.00) or more. The failure of any person to make such payment within said time shall, at the option of the Board of Trustees, be ground for forfeiture of his corporate membership. Corporate Members becoming Life Members, Patrons or Honorary Members shall be exempt from dues. Annual meetings of said Corporate Members shall be held at the same place and on the same day that the annual meeting of the Board of Trustees is held.

SEC. 4. Any person paying into the treasury the sum of five hundred dollars (\$500.00), at any one time, shall, upon the unanimous vote of the Board, become a Life Member. Life Members shall be exempt from all dues.

SEC. 5. Patrons shall be chosen by the Board upon recommendation of the Executive Committee from among persons who have rendered eminent service to the Museum. They shall be exempt from all dues, and, by virtue of their election as Patrons, shall also be Corporate Members.

SEC. 6. Honorary Members shall be chosen by the Board from among persons who have rendered eminent service to science, and only upon unanimous nomination of the Executive Committee. They shall be exempt from all dues.

ARTICLE II.

BOARD OF TRUSTEES.

SECTION 1. The Board of Trustees shall consist of fifteen members. The respective members of the Board now in office, and those who shall hereafter be elected, shall hold office during life. Vacancies occurring in the Board shall be filled at a regular meeting of the Board, upon the nomination of the Executive Committee made at a preceding regular meeting, by a majority vote of the members of the Board present.

SEC. 2. Regular meetings of the Board shall be held on the second Monday of each month. Special meetings may be called at any time by the President, and shall be called by the Secretary upon the written request of three Trustees. Five Trustees shall constitute a quorum, except for the election of officers or the adoption of the Annual Budget, when seven Trustees shall be required, but meetings may be adjourned by any less number from day to day, or to a day fixed, previous to the next regular meeting.

SEC. 3. Reasonable written notice, designating the time and place of holding meetings, shall be given by the Secretary.

ARTICLE III.

HONORARY TRUSTEES.

SECTION 1. As a mark of respect, and in appreciation of services performed for the Institution, those Trustees who by reason of inability, on account of change of residence, or for other cause, or from indisposition to serve longer in such capacity, shall resign their place upon the Board, may be elected, by a majority of those present at any regular meeting of the Board, an Honorary Trustee for life. Such Honorary Trustee will receive notice of all meetings of the Board of Trustees, whether regular or special, and will be expected to be present at all such meetings and participate in the deliberations thereof, but an Honorary Trustee shall not have the right to vote.

ARTICLE IV.

OFFICERS.

SECTION 1. The officers shall be a President, a First Vice-President, a Second Vice-President, a Secretary, an Assistant Secretary, and a Treasurer. They shall be chosen by ballot by the Board of Trustees, a majority of those present and voting being necessary to elect. The President, the First Vice-President, and the Second Vice-President shall be chosen from among the members of the Board of Trustees. The meeting for the election of officers shall be held on the second Monday of January of each year, and shall be called the Annual Meeting.

SEC. 2. The officers shall hold office for one year, or until their successors are elected and qualified, but any officer may be removed at any regular meeting of the Board of Trustees by a vote of two-thirds of all the members of the Board. Vacancies in any office may be filled by the Board at any meeting.

SEC. 3. The officers shall perform such duties as ordinarily appertain to their respective offices, and such as shall be prescribed by the By-Laws, or designated from time to time by the Board of Trustees.

ARTICLE V.**THE TREASURER.**

SECTION 1. The Treasurer shall be custodian of the funds of the Corporation, except as hereinafter provided. He shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents. But no warrants shall be issued, except in conformity with a regularly prepared voucher, giving the name of the payee and stating the occasion for the expenditure, and verified and approved as hereinafter prescribed. It shall be no part of the duties of the Treasurer to see that the warrants have been issued in conformity with such vouchers.

SEC. 2. The securities and muniments of title belonging to the corporation shall be placed in the custody of some Trust Company of Chicago to be designated by the Board of Trustees, which Trust Company shall collect the income and principal of said securities as the same become due, and pay same to the Treasurer, except as hereinafter provided. Said Trust Company shall allow access to and deliver any or all securities or muniments of title to the joint order of the following officers, namely: The President or one of the Vice-Presidents, jointly with the Chairman, or one of the Vice-Chairmen, of the Finance Committee of the Museum.

SEC. 3. The Treasurer shall give bond in such amount, and with such sureties, as shall be approved by the Board of Trustees.

SEC. 4. All vouchers executed for the payment of liabilities incurred in the administration of the Museum, shall be verified by the Auditor, and approved for payment by the Director, and the Chairman of the Administration Committee. All vouchers executed for expenditures for the construction or reconstruction of the Museum building, or buildings, shall be verified by the Auditor and approved for payment by the Chairman of the Building Committee. All vouchers executed in connection with the investments of the Corporation, or in any way having to do with the endowment funds of the Corporation, shall be verified by the Auditor and approved for payment by the Chairman of the Finance Committee.

SEC. 5. The Harris Trust and Savings Bank of Chicago shall be Custodian of "The N. W. Harris Public School Extension of Field Museum" fund. The Bank shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents. But no warrant shall be issued except in conformity with a regularly prepared voucher, giving the name of the payee and stating the occasion for the expenditure, and verified and approved by the Auditor, the Director and Chairman of the Administration Committee. It shall be no part of the duties of the said Custodian to see that the warrants have been issued in conformity with such vouchers.

ARTICLE VI.**THE DIRECTOR.**

SECTION 1. The Board of Trustees shall elect a Director of the Museum, who shall remain in office until his successor shall be elected. He shall have immediate charge and supervision of the Museum, and shall control the operations of the institution, subject to the authority of the Board of Trustees and its Committees. The

Director shall be the official medium of communication between the Board, or its Committees, and the scientific staff and maintenance force.

SEC. 2. There shall be four scientific departments of the Museum — Anthropology, Botany, Geology, and Zoology, each under the charge of a Curator, subject to the authority of the Director. The Curators shall be appointed by the Board upon the recommendation of the Director, and shall serve during the pleasure of the Board. Subordinate staff officers in the scientific departments shall be appointed and removed by the Director upon the recommendation of the Curators of the respective Departments. The Director shall have authority to employ and remove all other employees of the Museum.

SEC. 3. The Director shall make report to the Board at each regular meeting, recounting the operations of the Museum for the previous month. At the Annual Meeting, the Director shall make an Annual Report, reviewing the work of the Museum for the previous year, which Annual Report shall be published in pamphlet form for the information of the Trustees and Members, and for free distribution in such number as the Board may direct.

ARTICLE VII.

AUDITOR.

SECTION 1. The Board shall appoint an Auditor, who shall hold his office during the pleasure of the Board. He shall keep proper books of account, setting forth the financial condition and transactions of the Corporation, and of the Museum, and report thereon at each regular meeting, and at such other times as may be required by the Board. He shall certify to the correctness of all vouchers for the expenditure of the money of the corporation.

ARTICLE VIII.

COMMITTEES.

SECTION 1. There shall be six Committees as follows: Finance, Building, Auditing, Pension, Administration, and Executive.

SEC. 2. The Finance, Auditing and Pension Committees shall each consist of three members, and the Building and Administration Committees shall each consist of five members. All members of these five Committees shall be elected by ballot by the Board at the Annual Meeting, and shall hold office for one year, and until their successors are elected and qualified. In electing the members of these Committees, the Board shall designate the Chairman and Vice-Chairman by the order in which the members are named in the respective Committee; the first member named shall be Chairman, the second named the Vice-Chairman, and the third named, Second Vice-Chairman, succession to the Chairmanship being in this order in the event of the absence or disability of the Chairman.

SEC. 3. The Executive Committee shall consist of the President of the Board, the Chairman of the Finance Committee, the Chairman of the Building Committee, the Chairman of the Administration Committee, the Chairman of the Auditing Committee, the Chairman of the Pension Committee, and two other members of the Board to be elected by ballot at the Annual Meeting.

SEC. 4. Four Members shall constitute a quorum of the Executive Committee; three members shall constitute a quorum of the Administration Committee, and in all other standing Committees, two members shall constitute a quorum. In the event that, owing to the absence or inability of members, a quorum of the regularly

elected members cannot be present at any meeting of any Committee, then the Chairman thereof, or his successor, as herein provided, may summon any member of the Board of Trustees to act in place of the absentee.

SEC. 5. The Finance Committee shall have supervision of investing the endowment and other permanent funds of the Corporation, and the care of such real estate as may become its property. It shall have authority to invest, sell, and reinvest funds, subject to the approval of the Board.

SEC. 6. The Building Committee shall have supervision of the construction, reconstruction, and extension of any and all buildings used for Museum purposes.

SEC. 7. The Executive Committee shall be called together from time to time as the Chairman may consider necessary, or as he may be requested to do by three members of the Committee, to act upon such matters affecting the administration of the Museum as cannot await consideration at the Regular Monthly Meetings of the Board of Trustees. It shall, before the beginning of each fiscal year, prepare and submit to the Board an itemized Budget, setting forth the probable receipts from all sources for the ensuing year, and make recommendations as to the expenditures which should be made for routine maintenance and fixed charges. Upon the adoption of the Budget by the Board, the respective Committees shall be considered as authorized to make the expenditures detailed therein. No increase in the expenditures under any items of the Budget shall be made, except by authority of the Board of Trustees, but the Executive Committee shall have authority, in cases of emergency, to expend a further total sum not exceeding two thousand dollars in any one month.

SEC. 8. The Administration Committee shall have general supervision of the affairs of the Museum. The Committee shall hold one meeting each month with the Director at the Museum within a week preceding each Monthly Meeting of the Board of Trustees.

SEC. 9. The Auditing Committee shall have supervision over all accounting and bookkeeping, and full control of the financial records. It shall cause the same, once each year, or oftener, to be examined by an expert individual or firm, and shall transmit the report of such expert individual or firm to the Board at the next ensuing regular meeting after such examination shall have taken place.

SEC. 10. The Pension Committee shall determine by such means and processes as shall be established by the Board of Trustees to whom and in what amount the Pension Fund shall be distributed. These determinations or findings shall be subject to the approval of the Board of Trustees.

SEC. 11. The Chairman of each Committee shall report the acts and proceedings thereof at the next ensuing regular meeting of the Board.

SEC. 12. The President shall be ex-officio a member of all Committees and Chairman of the Executive Committee. Vacancies occurring in any Committee may be filled by ballot at any regular meeting of the Board.

ARTICLE IX.

NOMINATING COMMITTEE.

SECTION 1. At the November meeting of the Board, each year, a Nominating Committee of three shall be chosen by lot. Said Committee shall make nominations for membership of the Finance Committee, the Building Committee, the Administration Committee, the Auditing Committee, and the Pension Committee, and

for two members of the Executive Committee, from among the Trustees, to be submitted at the ensuing December meeting and voted upon at the following Annual Meeting in January.

ARTICLE X.

SECTION 1. Whenever the word "Museum" is employed in the By-Laws of the Corporation, it shall be taken to mean the building in which the Museum as an Institution is located and operated, the material exhibited, the material in study collections, or in storage, furniture, fixtures, cases, tools, records, books, and all appurtenances of the Institution, and the workings, researches, installations, expenditures, field work, laboratories, library publications, lecture courses, and all scientific and maintenance activities.

SEC. 2. These By-Laws may be amended at any regular meeting of the Board of Trustees by a two-thirds vote of all the members present, provided the amendment shall have been proposed at a preceding regular meeting.

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FIELD MUSEUM OF NATURAL HISTORY

PUBLICATION 200.

REPORT SERIES.

VOL.

ANNUAL REPORT OF THE
DIRECTOR

TO THE

BOARD OF TRUSTEES

FOR THE YEAR 1917.



CHICAGO, U. S. A.

January, 1918.

MAY 13 1918

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CONTENTS.

	PAGE
Board of Trustees	148
Officers and Committee	149
Staff of the Museum	150
Report of the Director	151
Maintenance	153
Publications	153
Library	154
Cataloguing, Inventorying, and Labeling	155
Accessions	157
Expeditions and Field Work	165
Installation and Permanent Improvement	167
The N. W. Harris Public School Extension	181
Photography and Illustration	183
Printing	183
Financial Statement	184
Attendance and Receipts	186
Accessions	187
Department of Anthropology	187
Department of Botany	188
Department of Geology	190
Department of Zoology	192
Section of Photography	195
The Library	195
Articles of Incorporation	209
Amended By-Laws	211
List of Honorary Members and Patrons	217
List of Corporate Members	218
List of Life Members	219
List of Annual Members	221

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January 1, 1918.

ANNUAL REPORT OF THE DIRECTOR.

1917

To the Trustees of Field Museum of Natural History:

I have the honor to present a report of the operations of the Museum for the year ending December 31, 1917.

The progress during the year just closed in the construction of the new Museum building in Grant Park has been important and perceptible. This would naturally appear to be so to the casual observer, because the work has been, so to speak, above ground, but from the standpoint of the architects and general contractors this is also the fact. During the year the inside and outside fill was completed. The setting of the exterior marble commenced in May, and at the end of the year the east and west wings of the building were practically completed as was also the basement work of the north and south entrances. Sixty per cent of both the marble carving and the sculptor marble are complete. The brick work in all the exterior walls is finished up to the roof line, and the interior court walls have been completed to the second floor. There has been difficulty in obtaining brick for the court walls, which accounts for this work not being finished. All the steel floor beams are in place with the exception of the north and south entrances. It is believed that the steel for the roof of the entire building including the nave, but not the entrances, will be in place before April 1918. It is also anticipated that all the roofing including the tile composition and glass work will be finished not later than August first. Excellent progress has been made in the plumbing work and approximately fifty per cent of this labor has been completed. The steam fitting has progressed with the other work and about twenty-five per cent of this contract is installed, exclusive of the boilers, stokers and coal handling machinery. Levels are continually being taken for signs of settlement or movement, but thus far there has been no moving whatever either horizontally or vertically during construction.

With no ceremony and in the presence of only a few of the Trustees and executive officers of the Museum, a copper box was placed in a corner stone of the new building on Friday, September 28, 1917, at 2:00 o'clock P. M. The box contained a typewritten history of the Museum from its inception until the date indicated; a photograph of

Mr. Marshall Field, the founder of the Institution; a photograph of the present Museum building; a copy of Mr. Field's will; a copy of the proceedings of the first meeting of the reorganized Board of Trustees of the Museum, held January 22, 1894, etc.

The sudden death of Mr. Henry Field, grandson of the founder of the Museum, and also the death of Mr. George Everett Adams, both Trustees of the Institution, occurred during the year. Mr. Field had not completed his first year as a Trustee, but had manifested in various ways an interest in and intention to support the plans for the further development and advance of the Museum. Mr. Adams, an old and highly respected citizen of Chicago, was a member of the first Board of Trustees, as he was of the first preliminary committee which resulted in the organization of the Museum. He took great pride in the Institution and was deeply concerned in its welfare.

Special mention should be made of further and large additions by Mr. Edward E. Ayer to the Ornithological Library which bears his name. The Chalmers Crystal Collection, through an annuity of \$500.00 provided by Mr. William J. Chalmers, has received important additions. A most generous gift of a large, valuable and rare collection of Navaho blankets, Indian baskets, costumes, etc., has been made to the Institution by Mr. Homer E. Sargent.

The installation of the Section of Plant Reproduction under the Stanley Field contribution in its new and commodious quarters, fully equipped with all the conveniences and appliances necessary to the work in this section, has been completed.

The endowment of the Stanley Field Museum Employees — Pension Fund has been consummated by final payment to the fund of \$75,000.00 by its founder. There have been no demands upon the fund thus far.

Judge R. M. Barnes of Lacon, Illinois, has accepted the appointment of Assistant Curator of Oölogy. His active services will not begin until the period for installation in the new building is reached. In the meantime, however, Mr. Barnes will prosecute more or less work in his science at his home, where he has a most remarkable collection.

The engineers of Graham, Anderson, Probst & White, architects, have made a careful inspection of the present Museum building, and, with the exception of a few instances where minor repairs and alterations seemed to be necessary, have found the building safe in every way. Their recommendations for alterations and repairs have been carried out.

The attendance at the Museum has not been very large. Continued public interest in the Museum, however, is manifested by the addition of a considerable number of Life Members during the year.

The influence of the N. W. Harris Public School Extension of Field Museum is widening by continually increasing the number of schools in which the cabinets are placed. In spite of the best efforts of the Extension, however, it is impossible to meet the demands that are made for this educational service.

MAINTENANCE.—The Budget authorized by the Board of Trustees provided the sum of \$156,911.00 for the maintenance of the Museum for the year ending December 31, 1917. The amount expended was \$137,486.00, showing a balance in excess of the estimated expenses of \$19,425.00. In addition to this amount \$4,626.00 was expended by authority of the Board of Trustees for collections, special building repairs, etc., bringing the total expenditures for the year to \$142,112.00.

PUBLICATIONS.—During the year six Publications were issued, comprising parts of four volumes, details of which follow:

- Pub. 191.—Zoölogical Series, Vol. X, No. 15. The Fishes of the Fresh Waters of Panama. By S. E. Meek and S. F. Hildebrand. December 28, 1916. 159 pages, 16 halftones. Edition 1500.
- Pub. 192.—Anthropological Series, Vol. XV, No. 2. The Beginnings of Porcelain in China. By B. Laufer. 1917. 106 pages, 7 halftones. Edition 1500.
- Pub. 193.—Zoölogical Series, Vol. XII, No. 1. Notes on little known Species of South American Birds with Descriptions of New Sub-Species. By C. B. Cory. January, 1917. 7 pages. Edition 1500.
- Pub. 194.—Report Series, Vol. V, No. 2. Annual Report of the Director for the year 1916. 71 pages, 11 halftones. Edition 2500.
- Pub. 195.—Anthropological Series, Vol. VI, No. 4. Three Etruscan Painted Sarcophagi. By F. B. Tarbell. 9 pages, 9 halftones. Edition 1,000.
- Pub. 196.—Ornithological Series. Vol. 1, No. 11. Contents and Index to Vol. I. 16 pages. 1896–1916. Edition 1,000.

It will be noted that number 11 concludes Volume I of the Ornithological Series. It also closes this Series. All future Ornithological Publications will appear in the Zoölogical Series.

These publications were distributed to individuals and institutions on the domestic mailing list and to those of foreign countries where exchange service is not suspended by the Bureau of International Exchanges. The nature of some of the Publications, as well as the increasing cost of all of them necessitated the re-classification of the mailing list. This has caused an elimination of some exchanges from which the Museum does not receive returns, and in sending to others previously receiving all the Publications, only such as are of special

interest to their work. In taking account of the sales of the Publications, it is interesting to note the increasing number sold to individuals and institutions as well as to booksellers. The stock of Publications and halftones was moved during the year from Room 64 to Room 11. Two more cabinets were purchased to accommodate the halftones and zinc etchings that are filed numerically to date.

THE LIBRARY.—The books and pamphlets accessioned during the year were 1,641, bringing the total number of books and pamphlets in the Library to 71,316, which are distributed as follows:

General Library	45,737
Department of Anthropology	3,553
Department of Botany	7,193
Department of Geology	10,276
Department of Zoölogy	4,557

The operations in the Library during the year were largely normal in character and the routine work has gone on without interruption. The resources of the Library continue to be taxed by the members of the scientific staff for material desired in their research work and in the quest for information in working up collections for reference or exhibition that have been received without data. The fourth year of the war brings a great decrease in the literary output of all foreign countries, especially in works on natural sciences. Exchanges have practically ceased with some foreign countries, and from others receipts have been irregular. Notwithstanding these conditions, there has been a gratifying increase of accessions over last year of two hundred and fifty books and pamphlets. The outstanding event of the year is the purchases made and presented by Mr. Edward E. Ayer of many rare and beautifully illustrated works for The Edward E. Ayer Ornithological Library. Among these are: Gould, *Icones Avium*, 2 parts, 1837-38; Gray, *Genera of Birds*, 3 volumes, 1844-49, one of the works that rank in beauty of execution with Gould's and Audubon's works already in this library; Edwards, *Natural History Birds*, 4 volumes, 1802-6; Buffon, *Histoire Naturelle des Oiseaux*, 20 volumes, 1770-86; Booth, *Rough Notes on Birds*, 3 volumes; Thorburn, *British Birds*, 4 volumes, 1915-16; Swainson, *Birds of Brazil and Mexico*, 1841; Thienemann, *Die Vögel Europas*, 1825; Levaillant, *Oiseaux d'Amérique et des Indes*, volume 1, 1801; Oates and Blanford, *Fauna of British India, including Ceylon and Burma. Birds*, 4 volumes, 1889-98. Subscription was entered to Mathews' wonderfully illustrated "*Birds of Australia*" of which five complete volumes and five numbers of volume VI have been received. Eighteen orders for books have been filled, adding fifty-four books and pamphlets to the Departmental Libraries. Among those

purchased are: Petrus Peregrinus de Magnate, a facsimile, 1900; Gray, China; Sykes, History of Persia; Steele, Translation from the Chinese of the I-li; Joly, Legend in Japanese Art; Audsley, Gems of Japanese Art; Shaw, Zoölogy; Waterhouse, Mammalia, pt. 2, 1839; Van Wijk, Dictionary of Plant Names, volume II. Subscriptions were also entered for "Mythology of all Races" and Hastings' "Encyclopedia of Religion." The periodical list is temporarily disorganized, as no subscriptions for a number of the foreign periodicals and serials are accepted at the present time by the agencies. During the year four hundred and thirty-seven books were received from the bindery. For the various catalogues 17,873 cards were written and filed. Two more sections were added to the card catalogue cabinets to accommodate the increase. Another bookcase was placed in the general reading room. The library again acknowledges its indebtedness to the City's libraries, to the Library of Congress, and the United States Medical Library for loan of books required by the scientific staff in the prosecution of their work. The number of people who visit the general library for the purpose of consulting its books shows an increase over previous years.

DEPARTMENTAL CATALOGUING, INVENTORING, AND LABELING. — The work of cataloguing in the Department of Anthropology has been carried on with vigor during the year, the total number of catalogue cards prepared amounting to 6,119. These cards are distributed over the various divisions as follows: Jewelry from India 80; Archaeology of China and Tibet 196; Melanesian Ethnology 4,064; American Archaeology and Ethnology 1,121; Physical Anthropology 658. All these cards have been entered in the inventory books of the Department, which now number 38. The number of annual accessions amounts to 21, thirteen of which have been entered. The total number of cards entered from the opening of the first volume amounts to 147,670. A total number of 6,430 labels was turned out by the printer for use in the exhibition cases of the Department. These are distributed over the divisions as follows: Gunsaulus Collection of Sword-Guards 3,544; Philippine Ethnology 2,207; Melanesian Ethnology 113; Mexican and Central American Archaeology 546; Egyptian Pottery 16; Salish Ethnology 4. The printer supplied the Department with 2,575 catalogue cards. Several new label cards were added to the label file.

In the Department of Botany all prepared and organized material received during the year has been specifically catalogued. The entries made number 15,933, bringing the total entries to 469,736. This Department has written 4,145 labels for specimens sent out in exchange with other institutions. Of these 64 were of the economic material and 4,081 herbarium specimens.

All accessions received by the Department of Geology have been fully catalogued. The largest number of additions in any division was that to the paleontological collections, which show an increase of 3,745 specimens. The total number of entries made during the year was 5,246, bringing the total entries to 139,919. A total of 7,878 cards have been written. The labeling of the meteorite collection has been completed, 578 labels having been made and installed during the year for this purpose. Other series labeled are those of Chilean copper ores and Brazilian gold and iron ores. A total of 361 labels have been written during the year and 775 labels are ready to be printed. To the Departmental series of photographs, 163 prints were added, making a total of 2,911. All of these prints have been labeled, numbered and placed in albums in the order of their receipt.

The regular cataloguing of the collection of mammals in the Department of Zoology has proceeded as usual. The relatively small number of accessions has made it possible to devote considerable time to the revision and completion of early records and to the segregation of material unaccompanied by authentic data. A total of 432 original catalogue entries were made during the year. In the classified card catalogue, 1,500 cards were written in Mammalogy, which included a considerable proportion substituted for temporary cards made some years ago before the collections had been fully classified. Separate indexes are now maintained of (1) the general study or reference collection of mammals; (2) the collection of mammals on exhibition; (3) the mammal skeletons in addition to those of Osteology; (4) the dressed skins of large mammals kept in special storerooms. With the exception of those of the dressed skins, these catalogues are now practically all revised and completed to date. The serial or synoptic collection of mammals on exhibition has been reclassified and new labels have been written throughout. Careful consideration of the matter of tagging and labeling the specimens in the Division of Ichthyology and Herpetology in the most efficient manner, resulted in the purchase of a numbering machine for stamping of tin tags, and in printing a uniform series of labels, to be placed against the inner side of the jars. The catalogue in this Division has been rearranged and is being rewritten as the study of the collections proceeds. Over 1,000 labels for the reinstallation of the shell cases were prepared. The entries made in the Department of Zoology numbered 1,024, bringing the total to 99,699. The cards written number 1,654, making a total of 34,122.

The following table shows the work performed on catalogues and the inventorying accomplished:

	No. of Record Books	Total No. of Entries to Dec. 31, 1917	Entries During 1917	Total No. of Cards Written
Department of Anthropology . . .	38	149,457	6,119	147,670
Department of Botany	58	469,736	15,933	75,620
Department of Geology	22	139,919	5,246	7,878
Department of Zoology	40	100,723	1,024	35,622
The Library	14	105,720	2,890	243,360
Section of Photography	20	117,848	3,393	.....

ACCESSIONS.—The Department of Anthropology received as a gift from Mr. Edward E. Ayer a rectangular cooking vessel and a large house lamp, both of steatite and both representing types from the Eskimo east of Point Barrow, Alaska, entirely new to the collection in the Museum. Mr. Ayer also presented a metate of Mexican type and a muller dug up some years ago at San Juan Capistrano, southern California. This is a fine specimen of perfect workmanship and superior to similar objects heretofore possessed by the Museum. Mr. Charles F. Rauchfuss of River Forest made an important addition to the Illinois archaeological collections of the Museum by his gift of 250 specimens, chiefly chipped objects, from Pope County. Mr. Homer E. Sargent presented to the Museum a small collection of Salish basketry, which will be of value in the study of technique, materials, and designs of that region. This collection was made in connection with a new research into Indian basketry initiated and patronized by Mr. Sargent. With the exception of the Stanley McCormick gifts resulting in the Hopi collections, no Southwest accession is comparable to the recent gift of Mr. Homer E. Sargent, the most prominent accession of the year. This group of eighty textiles presents the result of judicious and discriminative collecting extended with tact and taste over a period of more than ten years, and includes a great deal of material that at this time would not be obtainable. It comprises 37 Hopi and Navaho blankets of old designs, many of them bayetas; 9 Navaho squaw dresses of excellent weave and varying decorative motives; 6 Navaho woman's mantles; 1 Navaho man's woven shirt; 2 Chimayo blankets; 1 two-faced Mexican serape; 5 very rare Pueblo woman's ceremonial robes; 7 mantles or shawls from the same region; 2 fine Zufi dresses; 3 Pueblo woman's belts; 4 ceremonial kilts for men; 2 ceremonial sashes and other articles of the Southwest weaver's skill. Aside from their historical and ethnological significance, many of these textiles have decidedly artistic merits and qualities both as to design and coloration, and may compete with the best productions in Oriental rugs. The album presented by Mr. Tokumatsu Ito is deserving of especial mention. It contains 92 ancient wood-engravings representing favorite deities of the Japanese pantheon and sold by the temples to devotees and pilgrims, who keep

these pictures as charms. This is a unique collection made in the course of many years, and its value is enhanced by a complete transliteration and translation of the legends printed on the engravings, which Mr. Ito himself has kindly supplied. A recent purchase comprises about 390 Eskimo objects acquired by Mr. Petersen at Nome, Alaska, during his residence there. The whole collection adds materially to the strength of present exhibits from the Arctic regions. It is especially notable for the great variety of fine mammoth and walrus ivories, and small ivory objects, as carved hair combs, labrets, animal carvings, float plugs, belt fastenings, dart heads, etc., along with many fine larger artifacts. Also some grave material is included in this collection. The collections from the Far East were enriched by the purchase of six exquisite ceremonial ivory tablets secured by Dr. John C. Ferguson, state counsellor of the Chinese Government. These specimens are exceedingly rare, and can be obtained only from high officials who inherited them from their forefathers. They come down from the Ming dynasty (1368-1643), and were used by dignitaries of rank for jotting down memoranda and to be held in their hands at audiences with the emperor. The most notable accession of the year in the field of Latin American archaeology was a collection of artifacts from the region of Casas Grandes, Northern Mexico. These were excavated by Captains J. W. Wright and A. T. Cooper at Colonia Dublán, head-quarters of the American punitive expedition, and presented to the Museum through General Pershing. The collection consists principally of stone implements, and includes several of the large rectangular trough-shaped metates, characteristic of this region, which are of considerable interest and very rarely seen in museums.

The Department of Botany received the following important additions to its herbarium series during the year: The private herbarium of John Murdoch, Jr., presented to the Museum by his widow. It contains 3,322 sheets of plants, principally his personal collections in Massachusetts, Colorado, California and South Dakota. Other notable accessions were: Ames' Orchids 84; Bebb, Illinois 174; Blanchard, Vermont and District of Columbia 235; Britton, Britton & Wilson, Cuba and Isle of Pines 763; Collins, Bermuda 259; Cook, Canary Islands 383; Fernald, Newfoundland 292; Furness, Mexico 91; Gates, Illinois 1,447; Gaumer, Yucatan 760; Gronemann, Illinois 125; Heller, California and Oregon 403; Hill, Illinois and Indiana 1,769; King, Massachusetts 181; Lansing, Illinois 293; Leiberg, Oregon 514; Letterman, Missouri 285; Levine, China 1,046; McDonald, Illinois 111; Ridgeway, Illinois 169; Roosevelt African Expedition 135; Standley, Florida 102; Stewart, Galapagos 154; Vasey, Illinois 238; and Walker,

Alaska 385. The additions to the organized herbarium during the year comprised 15,439 sheets. The regional distribution of these is shown in the following tabulation. This represents only the regions to which additions were made and not the herbarium as a whole:

LOCALITY	Added this Year	Total in Herbarium
NORTH AMERICA (in general)	1	74
Arctic regions		
Northumberland Island	8	8
Alaska	240	1,391
Admiralty Island	13	13
Baranoff Island	14	14
Bell Island	8	8
Chicagoff Island	2	2
Etolin Island	2	2
Heceta Island	13	13
Kuiu Island	17	17
Prince of Wales Island	39	230
Revillagigado Island	11	11
Woewodski Island	1	1
Wrangel Island	4	4
Yakobi Island	21	21
British America:		
Prince Edward Island	26	38
Queen Charlotte Island	1	98
British Columbia	5	1,446
Newfoundland	295	766
New Brunswick	16	796
Nova Scotia	32	615
Ontario	7	1,667
United States:		
Alabama	19	1,559
Arizona	5	8,195
Arkansas	32	465
California	477	24,750
Colorado	548	9,806
Connecticut	20	654
Carolina, North	22	4,543
South	6	1,098
Dakota, South	548	1,854
Delaware	3	1,337
District of Columbia	144	2,668
Florida (exclusive of Keys)	140	20,285
Key West	1	145
Georgia	15	3,986
Idaho	11	3,661
Illinois	3,781	26,967
Indiana	539	6,796
Indian Territory	2	314

160 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

LOCALITY	Added this Year	Total in Herbarium
United States:		
Iowa	10	1,816
Kansas	3	540
Kentucky	3	1,371
Louisiana	4	1,387
Maine	243	1,645
Maryland	89	1,289
Massachusetts	1,955	5,345
Michigan	100	3,531
Minnesota	8	2,375
Mississippi	9	1,989
Missouri	288	3,882
Montana	9	4,038
Nebraska	2	495
Nevada	3	1,273
New Hampshire	104	1,658
New Jersey	11	3,132
New Mexico	79	3,581
New York	111	6,568
Ohio	3	2,048
Oregon	617	9,018
Pennsylvania	21	10,151
Rhode Island	10	600
Tennessee	10	1,367
Texas	159	9,766
Utah	18	2,566
Vermont	267	3,498
Virginia	45	2,768
Washington	74	7,494
West Virginia	26	2,028
Wisconsin	70	5,001
Wyoming	11	1,580
Yellowstone National Park	6	534
Bermuda	260	929
Bahama Islands:		
Frozen Cay	2	25
New Providence	1	2,445
Cave Cay	2	38
West Indies:		
Cuba	199	11,148
Grenada	13	814
Ile of Pines	608	1,266
Jamaica	102	7,320
Martinique	2	620
Porto Rico	3	4,730
CENTRAL AMERICA:		
Costa Rica	13	608
Guatemala	4	3,058
Mexico	165	37,148

LOCALITY			
CENTRAL AMERICA: (continued)		Added this	Total in
Lower California:		Year	Herbarium
Guadeloupe Island		2	44
San Benito Island		2	11
Yucatan		782	6,752
Panama		77	180
SOUTH AMERICA:			
Argentina		5	1,070
Chile		1	253
Dutch Guiana		1	4
Peru		2	162
Trinidad		7	494
Tobago		3	41
Venezuela		2	704
Curacao		1	100
Margarita Island		20	353
EUROPE:			
Great Britain (in general)		5	1,426
England		2	2,464
Scotland:			
Arran Island		1	2
Austria		5	7,778
France		1	8,338
Germany		3	8,658
Greece		1	697
Sweden		9	9,618
AFRICA:			
British East Africa		122	123
Canary Islands:			
Gran Canaria		389	391
Teneriffe		65	112
Congo		6	7
Madagascar		14	25
Nubia		1	11
Uganda		23	27
ASIA:			
Asia Minor		1	105
China, South		921	1,583
Songaria		1	46
India		4	1,063
Syria		1	363
Philippines		37	8,949
OCEANIA:			
Australia, South		2	4
Hawaiian Islands, (in general)		1	490
Horticultural		94	2,830
Illustrations mounted as Herbarium specimens		159	2,191

The Department of Geology received a number of valuable accessions during the year by gift, some of which may be specially mentioned

as follows: Through a fund generously donated by Mr. William J. Chalmers, about sixty specimens of crystals have been added to the Chalmers collection. Up to this time this collection, which was first exhibited at the Paris Exposition of 1900, had received only a few additions, but the increase made this year and the announced intention of Mr. Chalmers to continue its active enlargement, will result in forming a very superior collection. Among the specimens added to the collection this year was a well-formed octahedron of diamond from South Africa nearly an inch in length and weighing $209/16$ carats. Through the kind offices of Mr. Chalmers also, a donation of 108 specimens of the copper ores and minerals of the Chuquicamata district in Chile was received from the Chile Exploration Company of Chuquicamata, Chile. The series presented includes specimens of oxide ores from the veins, sulphide ores from the veins, and oxide, sulphide and mixed ores from the steam-shovel workings. Chalcocite, enargite, chalcopyrite, bornite, malachite, cuprite, brochantite, kröhnkite and atacamite are among the minerals represented. By thus affording a representation of the ores of one of the most notable copper districts of the world, this series forms an important addition to the collection. Mr. W. J. Chalmers was also instrumental in securing from the St. John del Rey Mining Company, Ltd., of Morro Velho, Brazil, through Mr. George Chalmers, Superintendent, a series numbering about forty specimens, of the ores and rocks of some of the chief gold mines in Brazil. The series received included typical ores and rocks of the Morro Velho mine, well known as the deepest gold mine in the world; a full representation of the gold and iron ores of the Gongo Secco and Serro do Curral mines showing especially the peculiar itabirite and jacutinga ores; and specimens of gold ores and country rocks from the Cuyaba and Raposos mines. Full descriptions and a map accompanied the specimens. These series add much of value to the Museum ore collections. A large collection containing many attractive specimens, consisting chiefly of copper minerals from mines in the Lake Superior district, but including also important specimens of Arizona copper minerals, Cripple Creek gold ores, etc., was presented by Nathan F. and Alfred F. Leopold. A specimen of sheet copper partly removed from the matrix, a sickle-shaped mass of copper over two feet in length showing many crystal planes, and an unusual specimen of malachite, are perhaps the most remarkable things in the collection. There are also included specimens of many kinds of occurrences of native copper, many of them crystallized, of calcite and copper, tellurides of gold, arsenides of copper, amethyst, etc. As many of the specimens were obtained from mines or localities no longer accessible, they have an

added value and importance on this account. This collection numbered 450 specimens. Through the kindness of Mr. Alpheus F. Williams, General Manager of the De Beers Consolidated Mines Company of Kimberley, South Africa, there was received from that Company an interesting collection showing the rocks and minerals which accompany the diamond in its occurrence at Kimberley. Some of the minerals, such as zircon, olivine and garnet, received in this collection were of gem quality. Specimens of the concentrates from which the diamond is obtained were also included. The rocks received included melaphyre, eclogite, shale, diabase, "blue ground," and others indicating the character of the formation from which the diamonds are obtained. Another valuable gift received was a collection of about 3,600 specimens of invertebrate fossils and minerals from Charles F. Rauchfuss. The fossils were principally from formations of Chester age in southern Illinois, a region which before had been little represented in the collections. The series of Pentremites and Archimedes in this collection was especially large and comprehensive, the Pentremites numbering nearly a thousand specimens representing five determined and several undetermined species, and the Archimedes numbering about one hundred specimens representing at least ten species. A large series numbering about one thousand specimens representing more than seventy-five species of fossil brachiopods from the Chester and other formations was also included, and there were about four hundred specimens representing seventy-five species of fossil corals chiefly from the Falls of the Ohio. A number of producers of bog marl and similar substances used in the manufacture of Portland cement in neighboring states, kindly donated specimens of this material in order to increase the representation of these products in the Museum. The courtesy of the following firms is gratefully acknowledged in this connection: Peerless Portland Cement Company, New Egyptian Portland Cement Company, Newaygo Portland Cement Company, New Aetna Portland Cement Company, Peninsular Portland Cement Company, and Wolverine Portland Cement Company. Small collections of ores and minerals were presented by Mrs. J. B. Ludlow and C. W. Pomeroy. Mr. Fred Patee presented a number of specimens of highly modified hematite crystals from a new locality in New Mexico. Several valuable accessions were received through exchange. From Yale University there were thus received a beautifully preserved skull with jaws and a partial skeleton of the short-legged, aquatic rhinoceros, Teleoceras. This was from the well-known locality at Long Island, Kansas. Besides its excellent state of preservation the form is of interest as being that of the last representative of the rhinoceros family in America. From Amherst College there was received

by exchange a partial skeleton of the fossil camel *Stenomylus* from Nebraska, and a pair of jaws and pelvis of *Leontina*, a large South American ungulate. A well-preserved skull of the Permian reptile, *Diplocaulus*, was obtained from the University of Chicago by exchange. From W. T. Watkin-Brown of Sydney, Australia, twenty-two specimens of Australian minerals were received by exchange. These included rare examples of native bismuth, bismuthinite, molybdenite and feldspars such as ordinarily cannot be readily obtained. Eleven specimens of an interesting occurrence of pyrite from Rolla, Missouri, were obtained from R. S. Dean by exchange, and a brilliant specimen of artificial bismuth crystals from William Thum by the same means. Twenty specimens of minerals were purchased, the most important being two showy specimens of violet apatite crystals from Maine and two large specimens of the newly discovered vanadium minerals hewettite and meta-hewettite. Among specimens acquired by collection may be mentioned 432 specimens of the Colby meteorite and twenty-four specimens of sand-carved boulders from Maine.

A noteworthy acquisition in the Department of Zoology during the year was the donation, from Mrs. Anna Sala Makovickyi of Oak Park, Illinois, of a collection containing approximately 2,700 domestic and exotic butterflies, moths and beetles gathered by her former husband, Mr. August Sala. Mr. Hugh T. Birch of Chicago presented to the Museum a cabinet of drawers containing 258 specimens of butterflies moths and beetles, mainly from Colombia, S. A. To Mr. B. Preston Clark of Boston, the Museum is again indebted for some very desirable additions to its series of sphinx moths. The specimens of mammals received from the Collins-Day South American Expedition were accessioned during the year. The synoptic collection of mammals received a number of additions, mostly of species of small size. These include the Cape Jumping Hare, Parry's Ground Squirrel, Zulia Squirrel, Redwood Chipmunk, Prairie Hare, Roof Rat, White-footed Mouse, Red-backed Mouse, and Lemming Mouse. A few specimens of mammals, from French Guiana, were purchased. An important accession of birds was secured by purchase from W. H. Rosenberg of London, England, consisting of 404 skins, representing many rare species from South America, nearly all of which were new to the Museum collection. Mr. T. L. Hankinson donated an interesting series of fresh-water fishes from Cuba and Florida, and Mr. Paul D. Ruthling presented some salamanders and lizards from southern California. An important accession consists of specimens of fishes, amphibians, and reptiles from California collected by the Assistant Curator. In this consignment were included the most complete single collection of tide

pool fishes ever made in that state, and a series of desirable fishes, mostly from Japan, presented by Stanford University. The accessions may be summarized as follows: Purchases: 41 mammals and 404 birds; By gift: 169 mammals, 5 birds, 1 nest and eggs, 213 fishes, 3,000 insects and 223 shells; By exchange: 6 fishes; By expeditions: 379 fishes and 180 insects.

EXPEDITIONS AND FIELD WORK. — Several short trips were made by the various members of the staff of the Department of Botany to Indiana and northern Illinois, for the purpose of obtaining living plant material for the Section of Reproduction. The Curator accompanied by an assistant made a day's trip to the interesting lake shore region between Waukegan and Beach, Illinois, on which they collected 56 plants for the herbarium. Preparator Lansing visited the Galena region, in Jo Daviess County, Illinois, collecting 205 plants for the herbarium and 414 for exchange purposes.

A trip was made by the Curator of Geology to Colby, Wisconsin, in order to secure specimens of the meteorite which fell there on July 4th. By excavating the soil at the point of fall the Curator succeeded in collecting about 20 pounds of the meteorite in the form of fragments which had been naturally formed by its shattering in striking the earth. There were 432 fragments so obtained, some of them being over 100 grams in weight. A large piece of a second individual, which fell about half a mile distant, was also secured. In addition photographs were made at the point of fall and descriptions of the phenomena of the fall obtained from a number of eye-witnesses. A remarkable deposit of wind-carved boulders in Maine was visited by the Curator and twenty-four specimens illustrating typical results of wind-action collected from the deposits. Some specimens illustrating glacial river phenomena were also collected in the same vicinity and about thirty photographs illustrating glacial phenomena made. The Assistant Curator of Geology spent ten days at Natural Bridge, Virginia, securing material and data for a model of the Natural Bridge. Besides taking more than one hundred photographs, he made a stadia survey of the region and plane-table surveys of portions of special importance. It is expected that with this data it will be possible to make a model which will be an accurate and faithful replica of Nature. The survey made by the Assistant Curator is, so far as known, the first detailed survey of the Bridge that has been accomplished since that conducted by Thomas Jefferson shortly after the close of his term as President. The courtesy and coöperation of Mr. T. H. Gurney of the Chesapeake & Ohio Railroad contributed materially to the success of the undertaking, as did also that of Mr. J. A. Mundy, President of the Bridge Company, who arranged for free admission to

the Bridge grounds, and provided the services of one of his employees as rodman. The Assistant Curator also spent two days in the northern Illinois lake region making detailed studies of the floating bogs of these lakes and their peat and marl deposits, in order to obtain data for making a model of a glacial lake. Besides the study material brought in, some additions to the permanent collections were thus procured.

In October the Assistant Curator of Ichthyology and Herpetology, accompanied by Taxidermist Pray, spent nearly two weeks in Wisconsin collecting material for exhibition purposes, the work being carried on along the Mississippi River, chiefly on Lake Pepin. 60 specimens for mounting were obtained, representing twenty-seven of the important food fishes of the Mississippi Valley. This material will cover the larger part of at least one side of a panel case, and will serve as the basis of three or four groups, for which the accessory material was also gathered. The success of this expedition depended to a considerable degree upon the coöperation of certain members of the Association of Commercial Fishermen and Clammers. Upon the request of the Association, the Museum sent as a loan a collection of twenty-two mounted food fishes, with labels, to the annual meeting of this organization held in La Crosse on November 30th. The fishes were also exhibited in the High School of that city. On three different occasions the lagoon in Jackson Park, adjacent to the Museum, was seined and numerous specimens were obtained, some of which have been mounted for exhibition. The Assistant Curator has collected a considerable number of local fishes, amphibians, and reptiles in the vicinity of Chicago while engaged in his work for the exhibition series. Frequent one-day trips were made and one week in August was spent in the sand dunes of Indiana collecting material for this Division. As soon as the summer had advanced sufficiently to make collecting profitable, a number of field trips were made for insect group material by the Assistant Curator of Entomology and his assistant. For this purpose Palos Park, Illinois, was visited at intervals in order to obtain specimens, particularly dragonflies, and accessories for a group illustrating the insect life of ponds. To represent the most conspicuous insects found in the vicinity of small, running streams, the region between New Lenox and Joliet was likewise visited at intervals. Toward the end of summer several trips were made to Edgebrook and other nearby places for material suitable for a group of tomato worm moths. Several days were also spent at Miller, Indiana, in order to secure the insects and accessories typical of sand areas, but, as the collecting season had already well advanced, it was not possible to secure a series of some of the early stages of the most characteristic forms. As a result of these trips enough

material, including accessories and photographs suitable for backgrounds, has been obtained for two, probably three, habitat groups and one of an economic nature. In addition to the group material, a number of duplicate specimens were gathered for the serial collection.

INSTALLATION, REARRANGEMENT, AND PERMANENT IMPROVEMENT. — All installation of cases in the Department of Anthropology during the year was carried on systematically with strict regard to conditions in the new building and in accordance with the newly adopted and approved plan of arrangement in the new quarters. The principle of avoiding duplication as far as possible and setting quality above quantity has been applied consistently. Duplicate material is now divided into two groups, designated as study and exchange collections. The study collections are treated on the same basis as the public exhibits, receiving the same care and attention, and will be made accessible to specialists and students. Detailed lists have been prepared of all collections available for exchange. A total of 55 cases has been installed, six of these being four-foot cases, and nearly all of them being completely labeled. The material installed in these cases is distributed over the various divisions as follows: Melanesian Ethnology 1 case; Philippine Ethnology 37 cases; American Ethnology 3 cases; Mexican Archaeology 5 cases; Jewelry of India 1 case; Japanese Sword-Guards 2 cases; and Egyptian Archaeology 6 cases. The case added to the Joseph N. Field Hall illustrates hunting, fishing and miscellaneous industries of New Britain. As soon as the cataloguing of the collections from New Guinea, now under way, is completed, the installation of this Hall will be rounded out. In accordance with the new policy laid down for installation and following the definite assignment of space in the new building, the Philippine collections were carefully overhauled so as to bring out to greatest advantage the characteristic traits of the various tribes without needless duplication of material. This necessitated the reorganization and relabeling of a large part of the cases on exhibition. However, the results are gratifying; the number of exhibition cases having been reduced from 127 to 79 without any characteristic culture being omitted, and without any essential features being sacrificed. Many labels have been rewritten, and much new information added, while the exhibits in their general appearance have been greatly improved, and, owing to the process of condensation, have gained in clear and direct representation. Various re-arrangements were further made in eight cases, and labels were added to about ten others. All cases of the Philippine collection were placed in new order according to the geographical distribution of tribes. The duplicate material withdrawn from exhibition has been divided into two groups; one for study pur-

poses and the other for exchange. A life-size group of six figures has been completed and is ready for exhibition in the new building. This group illustrates the production of cloth by the Bagobo of Mindanao in the various stages of manufacture, from the stripping of the so-called Manila hemp (*Musa textilis*), through the overtying and dyeing of the threads, to the weaving and polishing of the cloth. It will be an interesting addition to the Philippine Hall. The labeling of the African collection installed last year was completed during the summer. One case of Hopi head-dresses for ceremonial occasions has been installed in the East Court. Additional accessions of Hupa, Yurok and Karok festival dress and head plumes have necessitated the expansion of the old case containing varied ceremonial paraphernalia into two cases, one of woman's festival attire, and the other of costumes grouped according to the dances in which they were used. The entire Mexican collection is now being overhauled, grouped according to culture areas and tribes, and permanently installed. Specimens not selected for exhibition are reserved as study collections, and duplicates are listed for possible future exchange. The receipt of the Pershing Collection has necessitated a reinstallation of the two cases of Casas Grandes pottery presented last year by Mr. Homer E. Sargent, in order to permit a combination of the two as an integral unit. In addition have been installed a case of archaeological material from the Totonac and Huastec region of Vera Cruz, containing the well-sculptured stone yokes typical of this region, a four-foot case containing the best large stone sculptures from the Valley of Mexico from various collections, and two cases illustrating the ethnology of the Tarahumare, Tepehuane, and Tarascan, principally from the Lumholtz Collection. All cases are completely labeled as installed. Jewelry collected by G. A. Dorsey in British India has been installed in a wall-case of the Gem Room. The Gunsaulus collection of Japanese sword-guards and sword-fittings, described in the last annual report, has been installed in two standard cases, temporarily placed in Alcove 122 of the North Court. One of the cases contains 468 objects, the other 373, arranged on narrow shelves in such a way that each piece can be plainly viewed and studied from both sides. This is important, as the majority of sword-guards are decorated or inscribed both on the obverse and reverse. For this reason, each sword-guard had to be supplied with two labels, one explaining the obverse, the other the reverse. There is reason to believe that this is the first attempt in any museum to display sword-guards in a rational and intelligent manner. In general, a chronological principle of arrangement has been adopted, but within the various periods groups of art-schools and subjects are singled out, so that this material becomes a fit object-lesson for the

study of the development of Japanese design and art-motives. Plans have been laid out for the re-organization of the Egyptian collection and its adaptation to the new surroundings, for which the old-style cases proved unfit. Six standard cases are now completed, and comprise stone tomb tablets, portrait statuary, and statuettes, vases carved from alabaster and other stone, and pottery, the latter filling two cases. One of these contains vessels of the Prehistoric Empire, of Ptolemaic and Roman times, along with amphorae and ostraca collected by Mr. Ayer. The other case comprises Greek, Cypriote and Coptic pottery, Roman vessels and lamps of clay, Menas flasks and other amphorae. All this material is now displayed to greater advantage, and in conformity with modern methods. On January 11, Hall 11 adjoining the South Court was vacated to make room for the storage of publications, which required a re-arrangement and adjustment of the cases illustrating the ethnology of the Kwakiutl and Tlingit. The house-posts and 3 cases were placed in Hall 12. One case of Athapascan ethnology from Alcove 109, South Court, was placed in Hall 4. Two cases from Hall 11 were transferred to Alcove 109, South Court. One case from Hall 11 was removed to Alcove 111, South Court, along with a Tlingit case from Alcove 109. The case showing house-models was placed in Hall 10. Material from Costa Rica, Colombia, Peru, and Bolivia was placed in storage in Hall 69. After the new arrangement of the Philippine section, the East Annex was cleared of all new or vacant cases, scattered around in the various halls, and those are now concentrated in Hall 37. Four old Geology cases containing pottery and Gilbert Island armor of the Joseph N. Field Collections were stripped of their contents which were placed in permanent storage cases in Hall 68. The requisitioned cases were transferred to other departments of the Museum. The two Peabody wall-cases in Alcove 122, North Court, containing collections from India, were stored in Halls 68 and 69. Other material from India, including the wooden carvings long stored in the East Annex, has been placed in permanent storage in Hall 69. The contents of six standard cases of the oldest type in Hall 4, containing Eskimo ethnology, was transferred to standard cases of more recent make. The former cases will be used in the display of Mexican archaeology now being installed. As fast as the Peabody cases in the East Court have been vacated for re-installation, they have been used for storage in the West Annex of all study and exchange material, thus housing the specimens in less space and more safely than heretofore. Re-arrangements were made in 9 cases, and 61 cases were poisoned. Over 600 specimens, chiefly from the South Sea Islands, Philippine Islands, Egypt and Mexico, were repaired or treated dur-

ing the year. More than 11,000 new numbers have been marked on specimens.

In the Department of Botany the following 14 cases have been installed, labeled in full, and placed on exhibition: Of the American Forestry Series: Pride-of-China tree, Oregon Yew; Garry's Oak, Buckwheat tree; Hercules' club, Oregon Elder; Service tree, Southern Cherry; Oregon Crab-apple, Bitter Cherry; Sitka Willow, Wild Crab-apple; Myrtle Oak, Wild Plum; Devil-wood, Georgia Bark; Striped Maple, Mountain Laurel; Vine Maple, Yaupon. Of the Systematic Series: Two cases displaying the characteristic products and utilization of Sea-weeds; one case illustrating the economic products of the Soapwort family; and one case devoted to the botany and economics of the Spikenard family. A number of cases have been reinstalled to accommodate plant reproductions or new and specially interesting specimens. In many instances installed cases have been rearranged to better display their contents. Through the interest and munificence of Mr. Stanley Field, the Section of Plant Reproduction was reestablished, in connection with the Department of Botany. Five well-lighted connecting laboratories were constructed in the West Annex of the Museum building designed to accommodate a Biologist, a Glass-worker, an Artist, an Assembler, and a Caster in wax and plaster. The rooms were finished and equipped with apparatus in February. Dr. Dahlgren, the former Biologist in charge, accepted the Assistant Curatorship of Economic Botany in March, and the Museum succeeded in selecting and organizing the working staff on the lines previously employed in this unique and representative work. The training of the staff, each in his special craft, began about the middle of March and actual operations began the first of April. The end of the year finds the following reproductions completed and installed: The Pine Family: a specially preserved natural branch of Georgia Pine, accompanied by an enlarged male ament, a highly magnified anther, an enlarged female "cone" and magnified pistillate scale. The Pitcher-Plant Family: a complete, natural-size plant of *Sarracenia in situ* in bog-moss, a separate flower opened to show the arrangement of the reproductive organs, and two enlarged sections of the ovary. The Grass Family: a panicle and enlarged spikelet of Oats, accompanied by an enlarged flower at anthesis and a highly enlarged developing grain. The Cactus Family: a complete, natural-size plant of the Dune Cactus in flower, young bud and fruit, accompanied by a somewhat enlarged sectional flower and a transverse section of the ovary. The Spikenard Family: a complete, natural-size plant of Ginseng in full ripe fruit and retaining its characteristic root. The Spurge Family: the complete upper portion of a

large Castor-bean plant in full leaf, flower and ripe fruit; associated with enlarged models of a male cluster and female flower in section and a transverse section of the ovary. The Waterlily Family: a strikingly natural portion of a "Lotus bed" comprising life-size leaves in all stages of expansion, developing flower-buds, fruits and fully expanded flowers. The Mahogany Family: a natural-size branch of the Mahogany tree in full leaf and ripe fruit. The Dog's-Bane Family: a complete natural-size top of an Oleander bush with three branches in full flower and one in ripening fruit; associated with this is an enlarged flower of the Dog's bane sectioned to reveal the peculiar arrangement of the essential organs, and a transverse section of the ovary. The Blue-Green Algae: a model, in glass, of *Nostoc* (highly magnified) and a similarly produced model of *Rivularia*. The Green Algae: a complete natural-size reproduction, in glass, of a species of *Caulerpa*. During the period of production of the above the following reproductions and models were in process and are now nearing completion: A natural-size plant of Poison Ivy, in full leaf and flower, and an autumnal branch in full ripe fruit and colorate leaf; a large portion of a Trumpet-creeper vine in full leaf, flower and fruit; the terminal portion of a Bittersweet vine in full autumnal foliage and ripe fruit and a small branch in flower; a large branch of Witch-hazel in autumnal foliage, ripe fruit and flower; a large branch of the Sassafras tree in full leaf and fruit; and a complete male plant of *Nepenthes* in leaf, pitcher and flower. Accessory reproductions of specialized fruits, with a leaf or two attached to the stems, are produced as opportunity offers. Of these the Cocoon Fruit (*Fevillea*), of the Melon family, has been finished and installed; and the peculiar fruits of the Sausage Tree and the Wax Candle tree are in process. All the reproductions and models are made from living plants only and are fabricated from such materials as are permanent and will best simulate the transparency, freshness and texture of each special organ. In order that the full character of this work may be comprehended in this connection a recapitulation of the work accomplished previous to Mr. Field's contribution for the maintenance of the Section, may not be out of place in this report. The other plant families now represented, aside from the above, are: The Orchid Family: a complete, natural-size Vanilla vine, in full leaf, flower and mature fruit, accompanied by a large Cattleya flower and enlarged essential organs; The Milkweed Family: a complete, natural-size plant of the common Milk-weed in full leaf, fruit and flower-heads, accompanied by an enlarged flower, stamen, and a leg of a fly carrying a pollen sac; The Gingko Family: a large, natural-size branch of the Maidenhair tree in full leaf and ripe fruit. The Horsechestnut Family: a large branch of the Buckeye in

full leaf and fruit, accompanied by a smaller branch in leaf and flower, and a number of ripe fruits open to reveal their distinctive character; The Soapberry Family: a natural-size limb of the Akee tree in full leaf, flower and ripe fruit, plainly exemplifying the close relationship that exists between this family and that of the Horsechestnuts. This is accompanied by a portion of the flower cluster, enlarged, detailing a male and a female flower; The Pea and Bean Family: a branch of the Tamarind tree, in full leaf, flower and ripe fruit, and an enlarged, dissected flower of the common Pea; The Joint-Fir Family: a large portion of a Gnetum vine in full leaf, flower and fruit together with an enlarged "cone" and still greater enlargements of the male and the female flowers; The Snake-Root Family: the upper portion of a large Swan-flower vine, with its peculiar blossoms and buds, accompanied by a flower, in section, revealing the intricate structures developed to prevent self-fertilization; The Morning Glory Family: a complete Sweet Potato vine, including the root system, in full leaf and flower, an enlarged flower of the Morning Glory sectioned to reveal the essential organs, also a longitudinal and a transverse section of an ovary; The Bread Fruit Family: a natural-size branch of the Bread-fruit tree in full leaf and bearing a cluster of male and of female flowers together with a ripe fruit. This is accompanied by a half section of the ripe fruit, a large Jack Fruit with leaves, a quarter section of the fruit, and models of highly magnified male and female flowers; The Citrus Family: a natural-size branch of the Grape Fruit in full leaf and flower including a cluster of ripe fruits; an Orange flower, in section, revealing the essential organs; reproductions, with leaves, of the King Mandarin, Citron, Kumquat, Lemon, Sweet Lemon, Lime, Sweet Lime, Navel Orange, Pumelo, Tangerine, Finger Citron and sections of several fruits to show the character of the pulp; The Ebony Family: a large, natural-size branch of the Persimmon tree in full ripe fruit after the leaves have fallen; The Pigeon Plum Family: a natural-size branch of the Sapote in full leaf, flower and fruit, two enlarged flowers, three ripe Star-apples in transverse section; The Mangrove Family: a full case representing a Mangrove colony with the trees in full leaf, flower, fruit and aerial root, with a number of fruits floating and others taking root in the muddy shore; an enlarged flower sectioned and a series of fruits showing the development of the radicle; The Sorrel Family: a natural-size branch of the Bilimbi tree in full leaf, flower and fruit, a sectioned flower of the Sheep Sorrel, enlarged, and a cluster of Carambola fruits with leaves; The Magnolia Family: a large branch of the Great Magnolia in full leaf and floral cycle and with developing fruits; The Pawpaw Family: the upper portion of a Sour-sop tree in full leaf, flower and

ripe fruit, an enlarged flower in section, a cluster of Ylang-ylang fruits with leaves, a cluster of Pawpaw's with leaves and a Pawpaw fruit in section, a ripe Custard-apple with leaves; The Smartweed Family: a large branch of the Sea Grape tree in full leaf, flower and fruit, with an enlarged section of the flowering rhachis with three fully developed flowers; The Lily Family: a complete natural-size plant of Aloes in full flower, associated with this is a model of the summit of a lily plant in flower and a sectioned ovary; The Pomegranate Family: a natural-size branch of a Pomegranate tree in full leaf and flower, an enlarged flower, in section, with two sections of the ovary, and a ripe pomegranate sectioned to show the peculiar arrangement of the seeds; The Papaw Family: a complete summit of a Papaw tree in full leaf, female flower and all stages of developing fruits, a complete male inflorescence, an enlarged male and female flower, in section, and a full-ripe fruit cut to reveal the disposition of the seeds; The Arum Family: a complete, natural-size Anthurium in full leaf, flower and fruit, growing from the crotch of a tree and showing the aerial root system; with this are two flower spathes of the Indian Turnip cut to show the bases of the male and female spadices, a complete ripe fruit cluster, an enlarged stamen and the section of an ovary; The Nutmeg Family: a branch of a Nutmeg tree in full leaf, flower and fruit, enlarged male and female flowers, in section, a sectioned ovary and a ripe fruit opened to reveal the mace and nutmeg within; The Madder Family: a large branch of a coffee tree in full leaf, flower and developing fruit, an enlarged flower, in section, two sections of a ripe fruit showing the position of the twin coffee "berries" and a full plant of *Myrmecodium* — the "Living Ant's-nest"; The Chocolate Family: the summit of a Chocolate tree in full flower and developing fruit, with a branch in full leaf, an enlarged flower and a ripe fruit opened to reveal the disposition of the "beans"; The Lignum-Vitae Family: a natural-size branch of Lignum-vitae in full leaf, flower and fruit, an enlarged flower, in section, two sections of the ovary and mature fruits of another species; The Clove Family: a natural-size branch of the Guava tree in full leaf, flower and mature fruit, with this an enlarged flower, in section, and a sectional ovary; The Mushrooms: the following species have been reproduced toward illustrating the edible and poisonous mushrooms: clusters of two *Tricholomas*, *Grifola*, *Peziza*, *Armillaria*, *Marasmius*, *Amanita*, *Russula*, *Coprinus*, and *Agaricus campestris*, also a large specimen of *Clavatia gigantea* and another broken open to reveal the texture of the interior; The Bacteria: a monographic series of reproductions, in glass, micro-detailing a number of well-known species of disease germs, ferments, etc., tribal types, reproduction, nucleation and methods of cultivation;

The Diatoms: a monograph reproducing nine typical species and illustrating the method of conjugation, colonization, and the production of resting-spores; The Conjugatae: a monographic display reproducing ten unicellular and multicellular species also illustration of conjugation in the unicellular type and the formation and ejection of zoospores in the multicellular forms; The Liverworts: a natural-size colony of *Marchantia*, with enlarged male and female reproductive organs and a series of highly magnified reproductions illustrating both forms of generation; The Horsetails: natural-size reproductions of a whole sterile vegetative shoot, a complete male shoot and a magnified section of a sterile "cone," also a cluster of sporophores. A number of other pieces were produced and installed awaiting further reproductions in the families to which they pertain. They are: The Pepper Family: a reproduction of a bundle of fresh leaves of the Betel Pepper such as are sold in Malayan markets; The Arrow-Root Family: five natural-size flowers of *Thalia* so disposed as to reveal the peculiar development for fertilization; The Pineapple Family: a natural-size branch of a Calabash tree, in full leaf, acting as host for a colony of *Tillandsias*; The Ginger Family: reproduction of a full size, fresh, ripe fruit of the Cardamom as sold in Malayan markets as a vegetable; The Gamboge Family: a leafy tip of a branch of the Mangosteen bearing a full-ripe fruit, three sections of the fruit showing the disposition of the pulp and seeds; The Fig Family: the tip of a leafing Osage Orange branch bearing two mature fruits; The Caper Family: an enlarged Spider-flower, a section of the ovary and a fully matured fruit; The Connarad Family: a leafy branch of *Connarus* bearing a cluster of mature fruits, two fruits opened to reveal the peculiar seed and its aril; The Birch Family: an enlarged portion of a male and a female catkin displaying the essential organs and a still greater enlargement of a stamen; The Screw-Pine Family: reproduction of a mature *Pandanus* fruit.

A number of objects and collections in the Department of Geology have been installed in various halls, but as heretofore, owing to lack of space, this has been accomplished in most cases only by removal of other series which had previously been on exhibition. By some readjustments in Skiff Hall, a floor case containing about fifty of the largest specimens of copper from Lake Superior presented by Nathan F. and Alfred F. Leopold was installed. Before installation of these specimens they were thoroughly cleaned by immersion in sodium cyanide and then carefully coated with shellac by means of an air brush so that they could not again tarnish. At the same time the opportunity was improved to give a similar treatment to a number of other specimens of native copper and silver. The valuable collection of Lake

Superior minerals which for a number of years had been loaned to the Museum by the late Frank McM. Stanton was, owing to the decease of Mr. Stanton, returned to Mrs. Stanton at her request. In the space thus vacated, the collection of Chuquicamata, Chile, copper ores, received during the year, and a series of Bolivia copper ores were installed. By removal of less important specimens there were also installed in this hall the series of gold and iron ores and accompanying rocks from Brazil presented by Mr. George Chalmers, and a series of specimens representing the ores of the Chloride, Arizona, district. In order to provide greater security, the more valuable part of the platinum collections was transferred from this hall to Higinbotham Hall. This has relieved the previously overcrowded condition of the case which contained these specimens, and permitted better display of those of less intrinsic value. In order to provide space for the exhibition of two models which had recently been constructed, part of the synoptic fossil collection was removed from Hall 35 and the models installed in the space thus left. The models were constructed by the Assistant Curator. One illustrates the processes of extinction of a glacial lake, the other represents the relation of soil to rock in a glaciated region. The model illustrating the extinction of a glacial lake was constructed to explain the operation of those agents which are causing the gradual obliteration of numerous small lakes of glacial origin which are scattered through the moraine belt of the country and are especially numerous in parts of Illinois, Michigan and Wisconsin. Incidentally the nature and origin of the lake marl deposits are shown, as well as the mode of formation of the peat beds of the Upper Mississippi Valley. These beds are somewhat different in origin from those commonly described in text books. As it was found that no single lake was adapted to show these features properly in a model of suitable size, the model was made as a composite of a number of small Illinois and Wisconsin lakes with which the Curators were familiar. The model is made of Portland cement reinforced with expanded metal. It is five feet long, nineteen inches wide and two feet high. It was designed for installation on the floor of a deep wall case. The scale is 30 feet to the inch, which is small enough so that a considerable area can be represented and yet large enough to show vegetation in some detail. On the upper surface, the model shows half of a disappearing lake lying in a gravel and rock basin. The original shores of the lake appear where the hills meet the swamp which forms the present shore. From this original shore a swamp extends for a considerable distance towards the center. The two ordinary characters of shore marshes are shown in an open marsh of rushes and sedges on one side, and on the other side a cedar and tamarack swamp. Beyond

these there extends over the lake a fringe of floating bog, composed of a mat of rushes and sedges floating on the lake surface and attached to the shore. Beyond the floating bog, water is shown and on its surface appear representations of aquatic vegetation, such as lilies, bulrushes, etc., which grow in orderly, but sometimes broken sequence from the shore outward. On the bottom of the lake appear masses of water weeds also in zones, each kind of weed contributing its detritus to the masses of calcareous and organic material which slowly fill the lake. The front of the model shows a section of the lake and its adjoining ground. The lake bottom has also been modeled and may be seen through the representation of the lake water. This section shows at the sides and bottom the original gravel and rock basin of the lake. The peat and muck formed from the remains of aquatic vegetation extend towards the center from the sides. The floating bog also appears in section, and the underlying peat formed from the vegetable remains dropped from the rush mat is represented. Masses of bladderwort and similar water plants and the peat derived from them are shown in their proper position, as well as the lime-secreting algae and charas growing over the grayish-white marl which they are supposed to have formed on the lake bottom. The model illustrating the relation of soil and rock in glaciated regions is intended to show that in a glacial region the contour of the surface of the soil has no relation to the form of the rock surface below. The model is made of Portland cement laid on expanded metal. It is three feet long, one foot wide, and thirty-two inches high. The scale is 30 feet to the inch. It represents a region such as exists in the agricultural districts southwest of Chicago. The upper surface of the model represents a slightly rolling country with cultivated fields, pastures, farm buildings and a road. The front of the model shows a section through the soil and the rock below. The surface soil is represented lying on a mass of till, which in turn rests upon horizontally bedded limestone. The upper surface of the limestone is represented as having been carved in pre-glacial times to a very rugged topography, but the peaks and valleys of this rock topography are seen to have no bearing whatever on the contour of the gently rolling surface above. In order to bring the peat collections opposite the model illustrating the mode of formation of peat, the table cases in Hall 35 were rearranged, and in the case illustrating the occurrence of diamond, a new series of minerals and rocks associated with the occurrence of the South African diamonds was installed. In making this installation there was placed in the center of the collection a large label with a cut representing a cross-section of the Kimberley deposit. From appropriate places on this label white silk threads were extended to specimens of the corresponding rocks. Beyond these, specimens of

the minerals which are associated with the diamonds of the deposit were placed in a series of trays. In addition, the exhibit as at present displayed includes large samples of the Kimberley "blue ground" and a specimen of diamond in the matrix. The installation of the meteorite collection has been somewhat rearranged during the year and a number of improvements made. The pyramids of three of the cases containing stone meteorites were remodeled, in order to better display the specimens. For this purpose the specimens were first removed and then reinstalled. A border left by etching on a large number of specimens of the iron meteorites as they were received was found to be misleading to visitors, as it appeared to represent a natural feature. Accordingly fifty-two of these specimens have been repolished and reetched. Exhibition labels have been provided for the entire meteorite collection, and about six hundred were installed during the year. Adjacent to the meteorite collection, a series of terrestrial irons has been put on exhibition, the series including a number of specimens of the Santa Catharina and Greenland irons and awaruite from several localities. Two terrestrial globes prepared by the Assistant Curator to show special features, were added to the exhibition series of maps. One of these globes is colored to show the geological age of the different portions of the earth's surface about which the data are known, and upon the other are indicated the areas of the earth which are subject to earthquakes. The data for the geological globe were based largely on the well-known map by Jules Marcou with some corrections and additions. The colors chosen to represent the different periods were selected to give a pleasing effect and provide contrast without harshness. On the earthquake globe the land and water are shown in light colors and the earthquake regions are represented in a strongly contrasting dark shade. The zonal distribution of regions subject to earthquakes is thus well brought out. As the large skull of Triceratops in Hall 36 was found to be undergoing injury on account of vibration caused by the passing of heavy objects, it was removed to a less exposed location in Hall 33. Two floor cases of Jurassic fossils were moved from Hall 33 to Hall 36 in order to occupy the vacated space and some other adjustments of cases in this hall were made so as to give better lighting. The skeleton of the fossil wolf from the Los Angeles asphalt beds, which was mounted during the year, was installed in a case in Hall 36 with other specimens from these beds. The skeleton as mounted represents the animal stepping from an apparently firm mixture of asphalt and soil into a soft asphalt from which it was unable to escape. In a floor case in Hall 59 a skeleton of a saber-tooth tiger from the same deposit was placed on exhibition in a disarticulated form, so that its osteological characters may be readily

studied. A full series of labels was provided with which white silk threads extending from each element to its label indicate definitely the several parts. The contents of several cases in Hall 59, containing chiefly vertebrate Miocene fossils, were rearranged, largely in order to admit new specimens which had been worked out in the laboratory. The most important of these was a mount of the posterior half of a skeleton of the rare Oligocene aquatic rhinoceros, *Metamynodon*. This was mounted in relief on a slab three and one-half by five feet in size, the texture and color of the slab being made to imitate as far as possible the matrix from which the bones were taken. Each bone was also mounted so as to be easily removed from the slab whenever this may be desired for purposes of study, or otherwise. Other newly prepared specimens installed in these cases were, skulls and lower jaws of the rare Oligocene ungulate, *Protoceras celer*, and the same of the Oligocene suilline, *Perchoerus*. The large model of jaws of the fossil shark exhibited in Hall 60, was found to be undergoing injury on account of too much handling by visitors. It was accordingly removed to an alcove and a railing placed in front of it. The position of others of the large mounts in this hall was also changed in order to give wider passageways and better protection. In this connection the opportunity was improved to repair injuries which had been caused to many of the large mounts in this or adjoining halls by too great inquisitiveness of visitors. Mounts so repaired included those of the *Glyptodon*, *Hadrosaurus*, *Colossochelys*, *Uintatherium*, *Carcharodon* and *Mastodon*. The large case of Miocene fossils formerly in Hall 60 was moved to Hall 61 and the skull and partial skeleton of *Teleoceras* received during the year as well as some smaller specimens were installed in wall cases in the same hall. Work in the paleontological laboratory was hindered by the absence of the preparator during a large part of the year, but nevertheless a number of valuable specimens were either worked out or mounted, or both. Among the specimens thus prepared in the laboratory during the year were the *Metamynodon*, *Protoceras* and *Perchoerus* mounts already mentioned, a skull and jaws of *Parahippus*, portions of a skeleton of *Megacerops*, a number of canine teeth of the saber-tooth tiger and bones of the Mammoth. Some specimens received in exchange also were given treatment necessary to insure their better preservation.

In reclassifying the serial or synoptic collection of mammals in the Department of Zoology, many duplicates were eliminated and various other specimens, which it is now evident will not meet the standards or needs of the installations planned for the new Museum building, have been transferred to the reference collection or disposed of otherwise. Among these are a considerable number of mounted mammals prepared

a good many years ago, before the greatly improved methods of taxidermy now in use had been perfected. In many instances these specimens have been replaced by others of the same species of better quality. Following this a reinstallation was made of part of the synoptic collection including especially the smaller ungulates as the wild sheep, goats, and antelopes. These have been placed in twelve new cases of special design adopted as a standard to be followed for the remainder of the synoptic collection of mammals. The new cases have the general dimensions and appearance of the cases used throughout the Department of Zoology but are modified for the especial display of large and medium-size mammals by having slightly higher bases and by the use of single plates of glass in the sides without interrupting mouldings. The length of these cases is approximately 12 feet, the width 4 feet, and the height 8 feet. For smaller mammals a case of the same length and width but much reduced height was necessary and two such cases were satisfactorily installed; one with pigmy deer and antelopes and the other with wolves and foxes. Although work has progressed on several groups of mammals, none have been installed during the year. The most important mammal group under preparation is that of the American Bison, made possible through the generosity of Mr. Arthur B. Jones. Marked progress has been made with this group. Late in the winter of 1916 arrangements were made to obtain especially fine selected specimens from the living bison in the well known Corbin herd maintained by the Blue Mountain Forest Association of New Hampshire. At the proper time, therefore, the Museum Taxidermist selected the animals and prepared the skins and necessary parts of their skeletons together with measurements and the data required in this connection. These exceptionally fine skins have been prepared by the skin dresser and are now ready for use when needed. Meanwhile, a background was painted for this group by Mr. C. A. Corwin, representing a scene near the last stronghold of the bison in eastern Montana. This background is of semi-elliptical design and of very large size to conform to a generously proportioned case which, as planned, will be 28 feet wide, 14 feet deep, and 15 feet high. After preliminary models in wax had been made, full size manikins for the seven bison to be included in the group were prepared. During the year the work on the artificial vegetation accessory to the jaguar and capybara group was finally completed and this group is therefore ready for installation. Under the Stanley Field Ornithology Fund, three additional habitat groups of birds have been completed and installed for exhibition, and a fourth is well advanced. The completed groups are as follows: Group 1—Winter birds in northern Illinois, showing a number of winter species, including Hairy

Woodpecker, White-breasted Nuthatch, Chickadee, Snow Bunting, Blue Jay, some excited Crows have discovered a Screech Owl in a hollow tree, and a Northern Shrike is shown surrounded by several small birds (Redpolls, Siskins, etc.), which he has killed and placed on thorns for future consumption. Group 2 — A winter scene on shore of Lake Michigan, showing ice and open water. The group includes Herring Gulls, Surf Scoter, Long-tailed Duck or Old Squaw, and Red-breasted Mergansers; all familiar birds in this locality at that season. Group 3 — Bird Life at Fox Lake, Illinois. A summer scene, illustrating the nesting habits of a number of the smaller marsh birds and includes the Red-winged Blackbird, Yellow-headed Blackbird, Bank Swallow, Black Tern, Gallinule, Virginia Rail, Sora Rail, Coot, and Least Bittern. Many nests, eggs and young birds are shown. Thirty specimens of local fishes were mounted. There was also prepared, from a skin in liquid, an excellent mount of the monkey-fish, a strange eel-like creature inhabiting the California reefs. The large mounted sword-fish, which was literally falling to pieces, was remounted and put into such shape as to make a suitable display. Some time was devoted to the formulation of the best possible scheme for the display of fishes, amphibians, and reptiles in the new Museum building, in order that the exhibition aspect of the work in the Division might be most efficiently directed to that end. The Division of Entomology primarily directed its efforts toward the preparation of insects and insect groups for exhibition. A life-history exhibit of the mulberry silk-worm, containing fifty specimens, illustrating the various stages of the silk-worm, including the eggs, larvae, cocoon, and moths, was mounted on a wax mulberry branch. This life-history together with recently acquired photographs of the silk-worm industry in Japan, and a selection of the enlarged models of the same insect, are to be installed in one of the new A-cases. The Assistant Curator assembled and determined all of the alcoholic representatives of the scorpion, centipede and tarantula contained in the Museum collection. This material was prepared for exhibition and there are now ready for installation fifty-five mounts of these insects. Some of the material collected during the year by this Division has been prepared for exhibition and considerable progress has been made in making the casts of leaves, larvae, etc., for the tomato worm case. Satisfactory progress with the reinstallation of the shell collection was made only during the first five months of the year, during which time one case was filled and completed, while all of the shells still to be installed were remounted on new tablets, thus completing at least one important phase of this work. A portion of the systematic exhibition collection in osteology was reinstalled in cases released from the Division

of Mammalogy. 207 skulls were prepared and 4 skeletons were mounted for the systematic collection. 9 skeletons were prepared for the unmounted collection of comparative osteology and 4 for the Division of Mammalogy. 2 study specimens of skeletons of birds, a Saw-whet Owl and Purple Martin, and two skulls of young Rabbits, were also prepared.

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION OF FIELD MUSEUM OF NATURAL HISTORY.

— In this Department of the Museum there are now available 534 cases for circulation among the public schools, while several groups and a quantity of material are prepared and arranged ready for immediate installation in cases. In order to provide storage facilities for additional empty cases and for those already installed and for the purpose of improving former methods of delivering cases to and receiving them from the car, it was necessary to rearrange and enlarge the plan that was originally adopted for these purposes. The room devoted to storage has been divided into four parts, each part being furnished with racks and hooks for hanging the cases. Upon one group of racks are hung cases containing botanical subjects; upon another group of racks are hung cases containing geological material, and so on. At the ends of the aisles of racks numbers are displayed, designating what numbered cases are to be found in the aisles when selecting them for delivery to the schools and where they are to be replaced when returned from the schools. This arrangement will permit the storage of approximately 800 cases, and when the 250 cases, which have been ordered, have been received, the limit of the storage capacity of this room will have been reached. The ends of each case and the two general labels which accompany it are lettered and numbered alike. This idea was adopted as a simpler, quicker and a more dependable one for assigning, recording and identifying cases, than by means of case titles or subjects, which, of course, appear on the labels. By having greatly needed repairs and improvements made upon the delivery car during the last school vacation period, a stricter adherence of the daily schedule for the delivery and collection of cases is found possible than the condition of the car last year permitted. This Department has received many letters from principals and teachers similar to the one from the Principal of the J. A. Sexton School, which is herewith submitted:

"I wish to express the thanks and appreciation of the pupils and teachers of this school for the loan of the beautiful natural history cases which are sent from the Museum. In a congested district like this they are especially helpful, and they are a never failing source of pleasure and instruction for us all."

As an indication of the desire on the part of the Museum to increase the usefulness of its Extension System, the Curator frequently has

requested principals and teachers to express their views and opinions as to ways by which the desire would be accomplished. Cases are being loaned to 278 elementary schools and to their branches having a daily enrollment of a hundred or more students. It has been found advisable to increase the length of time allowed for cases to remain at one time in a school from two to three weeks. This extension in the duration of the loan period, not only gives the pupils an additional week for observation and study of the cases, but enables the Department to arrange and maintain a reliable schedule for the delivery and collection of cases. To accomplish this it was necessary to divide the schools in four sections and to form groups of schools in each section. At the beginning of the scholastic year the circulation of cases starts with the delivery of three cases from the Museum to each of the first group of schools located in what is designated as the first section. After each school in each group of the first section has been loaned three cases, deliveries are made in a similar way to schools of the third section. Three school weeks are required for the delivery of cases to the first school of the first group located in the first section to the last school in the last group of the third section. When these deliveries have been made, the cases are collected from these sections in the order in which they were delivered and distributed to groups of schools located in the second and fourth sections respectively. This system is maintained throughout the school period. By means of receipt cards the circulation record of each case is kept. Each card besides bearing the same letter and number as shown on the case and the labels which accompany it, has spaces for recording the name of the school to which the case has been assigned, the signature of the principal or teacher receiving it, the date it was received, the number of pupils studying it and the length of time it was retained.

PHOTOGRAPHY AND ILLUSTRATION. — The following is a tabulation of the work performed in this Section during the year:

	Number of Negatives made	Number of Prints made	Number of Lantern Slides made	Number of Enlarge- ments made	Number of Negatives Developed for Expi- dition	Number of 6¼x8¾ Positives made Used in making large Negatives
General	9	67	..	..	..	..
Anthropology	118	476	..	..	..	..
Botany	39	1,193	22	..	32	..
Geology	46	587	..	7	177	7
Zoology	21	57	..	..	2	..
Harris Extension	8	41	..	1	8	1
Distribution . . . . .	...	76	..	..	..	..
Gift . . . . .	...	45	3	..	..	..
Sale . . . . .	...	325	25	..	..	..
Totals	241	2,867	50	8	219	8

Total number of Catalogue entries during 1917 3,393

Total number of Catalogue entries to December 31, 1917 117,848

Total number of Record Books 20

PRINTING. — The number of labels and other impressions made by the Section of Printing is as follows during the year:

	Exhibition Labels.	Other Impressions.
Anthropology	6,430	2,575
Botany	723	16,780
Geology	1,251	700
Zoology	2,051	4,950
General . . . . .	....	64,764
Library . . . . .	....	7,200
Harris Extension	344	.....

Herewith are also submitted financial statements, list of accessions, names of members, etc., etc.

FREDERICK J. V. SKIFF, Director.

FINANCIAL STATEMENT.

RECEIPTS AND DISBURSEMENTS.

January 1, 1917, to December 31, 1917.

RECEIPTS

Cash in Treasurer's hands December 31, 1916:		
General Fund	\$2,188.49	
New Exhibition Cases Fund	791.60	
Life Memberships Fund	1,514.60	
Sundry Funds	1,179.20	\$5,673.89
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Petty Cash on hand December 31, 1916		739.95
Dues of Life Members		3,000.00
Dues of Annual Members		860.00
Admissions and Check Rooms		5,375.50
Sale of Guides — Profit		156.00
South Park Commissioners		15,000.00
Interest on Investments and Bank Balances		24,498.01
Field Endowment Income		131,500.00
Field Endowment Sinking Fund		8,337.27
Field Endowment Sinking Fund Income		552.37
Life Memberships Fund Income		1,674.81
New Exhibition Cases Fund Investments retired		2,895.00
New Exhibition Cases Fund Income		94.52
New Building Moving and Furnishing Fund Income		1,444.90
Stanley Field Plant Reproduction Fund		7,995.00
Stanley Field Ornithology Fund		700.00
R. F. Cummings Philippine Fund		97.92
Arthur B. Jones Buffalo Group Fund		1,776.02
H. W. Jackson Library Fund Income		75.16
W. J. Chalmers Crystal Collection Fund		500.00
Donations — Special		370.65
Picture Postal Cards — Sales	\$685.28	
Picture Postal Cards — Sundry Receipts	97.48	782.76
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Sundry Receipts		177.27
		<hr/>
		\$214,277.00

DISBURSEMENTS

Salaries		\$75,814.30
Guard Service		11,537.49
Janitor Service		7,106.39
Fire Protection		3,114.56
Heat and Light		17,249.28
Repairs and Alterations:		
Wages — Carpenters, Painters and Roofers	\$8,558.01	
Materials used — lumber, paint, oils, glass, etc.	1,078.54	9,636.55
Furniture and Fixtures:		
Cases and Bases	\$4,863.35	
Office Furniture and Herbarium Cases	764.50	5,627.85
The Library:		
Books and Periodicals	\$799.80	
Binding	523.84	
Sundries	261.32	1,584.96
Collections Purchased		856.93
Installation Expenses		2,217.22
Publications		2,237.82
Picture Postal Cards — Renewals		561.02
Sections of Photography and Printing — Supplies		756.09
General Expense Account:		
Freight, Expressage and Teaming	\$1,191.03	
Stationery, Postage and Telephone	970.58	
Liability Insurance	659.12	
Sundries	970.21	3,790.94
Stanley Field Plant Reproduction Fund		7,511.72
Arthur B. Jones Buffalo Group Fund		2,158.80
Stanley Field Ornithology Fund		600.00
W. J. Chalmers Crystal Fund		326.35
New Building Moving and Furnishing Fund — Investments		1,400.00
Life Memberships Fund — Investments		7,300.00
Endowment Sinking Fund — Investments		24,810.64
General Fund — Suspense — Investments		23,885.00
Stanley Field Ornithology Fund — Investments		100.00
H. W. Jackson Library Fund — Investments		85.51
In Treasurer's hands December 31, 1917:		
General Fund	\$2,417.05	
Picture Post Card Fund	275.25	
Endowment Sinking Fund	243.83	2,936.13
Guards' Uniform Account		311.50
Petty Cash on hand, December 31, 1917		739.95
		<u>\$214,277.00</u>

ATTENDANCE AND RECEIPTS FROM JANUARY 1, 1917 TO
DECEMBER 31, 1917.

ATTENDANCE			
Paid Attendance:			
Adults	18,821		
Children	1,134	19,955	
Free Admission on Pay Days:			
School Children	7,927		
Students	3,703		
Teachers	618		
Members	54		
Officers' Families	54		
Special	198	12,554	
Admissions on Free Days:			
Saturdays	35,697		
Sundays	122,991	158,688	
Total Attendance		191,197	
Highest Attendance on any one day (July 8, 1917) . . .		5,845	
Highest Paid Attendance on any one day (September 3, 1917)		710	
Average Daily Admissions (363 days)		526	
Average Paid Attendance (239 days)		77	
RECEIPTS			
Guides Sold — 624 at 25 cents each		\$156.00	
Articles checked — 11,133 at 5 cents each		556.65	
Admissions		4,818.65	
		\$5,531.30	

ACCESSIONS.

DEPARTMENT OF ANTHROPOLOGY.

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

ALLIS, CHARLES, Milwaukee, Wisconsin.

3 sword-guards — Japan.

AYER, EDWARD E., Chicago.

Eskimo steatite cooking vessel and lamp — Alaska.

Metate with muller — San Juan Capistrano, California.

BROSS, MRS. MASON, Chicago.

5 pieces of pottery — Southwest and Mexico.

COOPER, A. T. and WRIGHT, JOHN W., Fort Bayard, New Mexico.

325 prehistoric stone implements and pottery — Chihuahua, Mexico.

DRUMMOND, DR. I. W., New York City.

1 ancient jade chisel — China.

EMMONS, LIEUT. G. T., Princeton, New Jersey.

2 Shaman's head-dresses of bear claws, Tsimshian — Upper Nass River,
B. C. (exchange).

FIELD MUSEUM OF NATURAL HISTORY.

Purchases:

Prehistoric flint arrowheads — Edgewater, Illinois.

General collection from Eskimo, Alaska, about 390 specimens — Nome,
Alaska.

6 ancient ceremonial ivory tablets — Peking, China.

FRIESSER, JULIUS, Chicago.

2 flint projectile points — Holland, Michigan.

GEOLOGICAL SURVEY, DEPARTMENT OF ANTHROPOLOGY, Ottawa,
Canada.

1 birchbark canoe — Montagnais, St. Lawrence River, Canada
(exchange).

HARVEY, CHARLES A., Chicago.

1 burned clay pot, 2 skeletons — Marblehead, Illinois.

HOLBROOK, MISS FLORENCE, Chicago.

1 pair embroidered mittens — Upernivik, Greenland.

ITO, TOKUMATSU, Chicago.

Album containing 92 old Japanese charms printed on paper,
accompanied by a transliteration and translation of the legends —
Tokyo, Japan.

MASON, J. A., Chicago.

2 stone celts, 5 clay figures, 5 groups of potsherds — Tampico, City of
Mexico, Campeche.

PIER, GARRETT C., Greenwich, Connecticut.

19 ancient beads of jasper, agate and rock-crystal, 1 necklace of lacquered
clay beads, 6 ancient gilded bronze rings — Japan.

RAUCHFUSS, CHARLES F., River Forest, Illinois.

2 grooved axes, 3 fine chipped spades, 1 chipped flint disc, 1 rude blade, chipped, 2 fragments pottery, and 235 chipped implements comprising knives and projectile points, scrapers, perforators and rejects, chiefly from Pope County, Illinois.

SARGENT, HOMER E., Chicago.

35 specimens Indian basketry — British Columbia; 39 Navaho, Hopi, Chimayo, and Mexican blankets, 41 pieces of Navaho, Hopi, Pueblo, and Acoma costumes; 1 moose-skin gun-case, 1 caribou hunting shirt, 2 game bags, Tahltan, 2 pairs moccasins — Yukon Territory.

WEAVER, D. W., Culver, Indiana.

1 arrowhead — Culver, Indiana.

DEPARTMENT OF BOTANY.

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

AMES BOTANICAL LABORATORY, North Easton, Massachusetts.

30 herbarium specimens — Philippine Islands (exchange); 54 herbarium specimens — various localities (exchange).

BUREAU OF SCIENCE, Manila, P. I.

3 herbarium specimens — Prov. Ilocos, P. I.

CALIFORNIA ACADEMY OF SCIENCES, San Francisco, California.

158 herbarium specimens — various localities (exchange).

CLAYBERG, HAROLD D., Urbana, Illinois.

1 herbarium specimen — Michigan.

CLOKEY, IRA W., Denver, Colorado.

71 herbarium specimens — Colorado (exchange).

CROSBY, MISS GRACE, Montclair, New Jersey.

1 herbarium specimen — New Jersey.

DEAM, CHARLES C., Bluffton, Indiana.

10 herbarium specimens — 17 herbarium specimens — Indiana and Illinois.

DEPARTMENT OF AGRICULTURE, Washington, D. C.

6 specimens seeds — various localities.

EVANS, PROF. A. W., New Haven, Connecticut.

20 herbarium specimens — Mexico.

FIELD MUSEUM OF NATIONAL HISTORY.

Collated by C. F. Millsbaugh:

22 herbarium specimens — Yucatan; 12 herbarium specimens — various localities; 4 photographic portraits of plants — Bahamas; 102 illustrations of species; 4 herbarium specimens, 1 illustration — various localities.

Collected by B. E. Dahlgren:

Living plants of *Nelumbium lutea* and 1 herbarium specimen — Grass Lake, Illinois.

Collected by O. E. Lansing, Jr.:

205 herbarium specimens — Jo Daviess County, Illinois.

Collected by C. F. Millsbaugh and O. E. Lansing, Jr.:

52 herbarium specimens — Illinois; 4 herbarium specimens — Indiana.

Transfer from Department of Anthropology:

1 alga and shell necklace — Loyalty Islands.

Transfer from Department of Zoology:

20 specimens of lower algae and chara — Guatemala — Mexico.

Purchases:

982 herbarium specimens — Illinois and Wisconsin.

28 herbarium specimens — Maryland.

385 herbarium specimens — Alaska.

919 herbarium specimens — China.

530 herbarium specimens — Illinois.

452 herbarium specimens — California and Oregon.

Stanley Field Plant Reproduction Laboratory:

Enlarged flowers of oats, whole plant of ginseng.

Reproductions in glass and wax of — pitcher plant (whole plant), the sand-dune cactus (whole plant), the mahogany tree (branch and fruits), the antidote cocoon (fruits), the pitcher plant (flowers), castor bean (flowers), the pine (flowers).

Reproductions and models of: Castor bean, plant, oleander, branch, dogsbane, flower, cactus, flower, lotus, root system.

FLORA, E. E., Chicago.

Specimen of bog oak — England.

FURNESS, D. R., Evanston, Illinois.

91 herbarium specimens — Mexico.

GAUMER, GEORGE F., Izamal, Yucatan.

760 herbarium specimens — Yucatan.

GRAY HERBARIUM, Cambridge, Massachusetts.

131 herbarium specimens — New Mexico and Texas (exchange).

292 herbarium specimens — Newfoundland (exchange).

664 herbarium specimens — various localities (exchange).

GRONEMANN, C. F., Chicago.

51 herbarium specimens — Elgin, Illinois.

75 herbarium specimens — Illinois.

HALL, ELIHU, THE FAMILY OF, Athens, Illinois.

468 specimens catalogued and installed of the private herbarium of Elihu

Hall, accession still unfinished — various localities.

HARTMAN, WILLIAM A., Chicago.

1 fungus — Chicago.

HIGGINS, JOHN, Chicago.

6 specimens hybrid Solomon's seal — Garden, Lincoln Park, Chicago.

KING, MISS ANNA, Highland Park, Illinois.

181 herbarium specimens — South Dartmouth, Massachusetts.

LANSING, O. E., Jr., Chicago.

93 herbarium specimens — Indiana and Illinois.

MCDONALD, F. E., Peoria, Illinois.

121 herbarium specimens — Illinois and Iowa.

MILLSAUGH, C. F., Chicago.

13 herbarium specimens — Wisconsin.

MISSOURI BOTANICAL GARDEN, St. Louis, Missouri.

664 herbarium specimens — various localities (exchange).

MITCHELL, A. J., Biloxi, Mississippi.

1 herbarium specimen — Biloxi, Mississippi.

1 herbarium specimen — Louisiana.

MURDOCH, MRS. ALICE L., Boston, Massachusetts.

3322 specimens — Private herbarium of John Murdoch, Jr. — various localities.

MURRILL, PROF. W. W., New York City.

47 plates of fungi.

NEWCOMBE, DR. C. F., Alberta, British Columbia.

1 photograph type plant — Queen Charlotte Islands.

NEW YORK BOTANICAL GARDEN, New York City.

142 herbarium specimens — Jamaica (exchange).

1 photograph of type species — Cuba (exchange).

6 photographs of plants — Cuba (exchange).

O'BRIEN, WILLIAM, Chicago.

1 fungus — Chicago.

RIDGEWAY, DR. ROBERT, Olney, Illinois.

169 herbarium specimens — Illinois.

SAFFORD, WILLIAM E., Washington, D. C.

17 photographs of type species — various localities.

2 photographs of type sheets — Field Museum herbarium.

SARGENT, PROF. C. S., Jamaica Plain, Massachusetts.

1 herbarium specimen — Waukegan, Illinois.

SHERFF, EARL E., Chicago.

1 herbarium specimen — Dutch Guiana.

1 herbarium specimen — Berkeley, California.

TOLMAN, L. M. Chicago.

1 wild nutmeg — South America.

U. S. NATIONAL HERBARIUM, Washington, D. C.

1477 herbarium specimens — various localities (exchange).

U. S. NATIONAL MUSEUM, Washington, D. C.

248 herbarium specimens — various localities (exchange).

UNIVERSITY OF ILLINOIS, Urbana, Illinois.

1769 herbarium specimens — various localities (exchange).

WILSON & COMPANY, Chicago.

Fruits of the Mexican nutmeg — Mexico.

DEPARTMENT OF GEOLOGY.

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED)

ALLARD, JOEL T., Center Lovell, Maine.

1 specimen weathered basalt — Lovell, Maine.

AMHERST COLLEGE, Amherst, Massachusetts.

Partial skeleton of *Stenomylus* and bones of *Leontina* — Nebraska and Patagonia (exchange).

BROWN, W. T. WATKIN, Kogara, Sydney, New South Wales.

22 specimens minerals — Australia (exchange).

CHALMERS, GEORGE, Morro Velho, Minas, Brazil.

34 specimens gold ores and associated rocks — Morro Velho, Minas, Brazil.

5 specimens gold and iron ores — Minas Geraes, Brazil.

CHALMERS, WILLIAM J., Chicago.

1 specimen copper ore — Globe, Arizona.

55 specimens crystals — various localities.

CHILE EXPLORATION COMPANY, Chuquicamata, Chile.

108 specimens copper ores and minerals — Chuquicamata, Chile.

DEAN, R. S., Chicago.

11 specimens pyrite crystals — Rolla, Missouri (exchange).

3 specimens chert nodules, 1 specimen chert nodules, 1 specimen chert — Rolla, Missouri.

DE BEERS CONSOLIDATED MINES, Ltd., Kimberley, South Africa.

Series of rocks and minerals accompanying diamonds — Kimberley, South Africa.

DOHMEN, U. A., Chicago.

2 specimens invertebrate fossils — Yorkville, Illinois.

FIELD MUSEUM OF NATURAL HISTORY.

Collected by O. C. Farrington:

432 specimens Colby meteorite — Colby, Wisconsin.

24 specimens wind-carved boulders, 4 specimens moraine boulders, 1 specimen water-worn surface, 4 specimens feldspar, 2 specimens mica schist — Maine and New Hampshire.

Collected by J. F. Ferry:

1 specimen arborescent calcite — Aruba, Dutch West Indies.

Collected by H. W. Nichols:

2 specimens peat — Antioch, Illinois.

4 specimens limestone, 1 specimen cave earth — Natural Bridge, Virginia.

Purchases:

43 specimens clay concretions — Nome, Alaska.

11 specimens hewettite and metahewettite — San Miguel Co., Colorado.

7 specimens Colby meteorite — Colby, Wisconsin.

7 specimens minerals — various localities.

1 meteorite — Kofa, Arizona.

FRIESSER, J., Chicago.

2 mammal skulls, 1 specimen "coal brass."

GREENE, NEWTON A., New Albany, Indiana.

2 specimens crinoids — New Albany, Indiana.

HARDY, THOMAS, Chicago.

1 marcasite concretion — Cutler, Illinois.

KURTZ, S. A., Bucyrus, Ohio.

1 specimen Syringopora — Genoa, Ohio.

LEOPOLD, NATHAN F. AND ALFRED F., Chicago.

450 specimens ores and minerals — Lake Superior, Arizona, Colorado and Montana mining districts.

LUDLOW, MRS. J. B., Chicago.

29 specimens minerals, fossils and geological specimens — various localities.

MORRISON, J. B., Cedar, Colorado.

4 specimens patronite, 4 specimens calciovolborthite — San Miguel County, Colorado.

NEW AETNA PORTLAND CEMENT COMPANY, Fenton, Michigan.

1 specimen marl — Squaw Lake, Michigan.

- NEWAYGO PORTLAND CEMENT COMPANY, Newaygo, Michigan.
 2 specimens limestone, 1 specimen shale used for making Portland
 cement — Newaygo, Michigan.
- NEW EGYPTIAN PORTLAND CEMENT COMPANY, Fenton, Michigan.
 1 specimen marl — Fenton, Michigan.
- NOELLE, MR., Chicago.
 1 quartz geode.
- NORCROSS BROS. COMPANY, Chicago.
 1 slab polished marble — Tate, Georgia.
- PATEE, FRED, Casper, Wyoming.
 1 specimen soapstone, 10 specimens crystallized hematite — New Mexico.
- PEERLESS PORTLAND CEMENT COMPANY, Union City, Michigan.
 1 specimen marl — Union City, Michigan.
- PENINSULAR PORTLAND CEMENT COMPANY, Cement City, Michigan.
 1 specimen marl — Cement City, Michigan.
- POMEROY, C. W., Chicago.
 17 specimens minerals and ores — various localities.
- RAUCHFUSS, CHARLES F., River Forest, Illinois.
 Collection of invertebrate fossils and minerals numbering 3,600 specimens —
 various localities.
- SELLERS, F. H., Chicago.
 1 specimen fossil *Lepidodendron* — Southwest United States.
- THUM, WILLIAM, East Chicago, Indiana.
 1 specimen crystallized bismuth (exchange).
- UNIVERSITY OF CHICAGO, Chicago.
 1 specimen Permian amphibian, *Diplocaulus* — Texas (exchange).
- WOLVERINE PORTLAND CEMENT COMPANY, Coldwater, Michigan.
 1 specimen marl — Coldwater, Michigan.
- YALE UNIVERSITY, New Haven, Connecticut.
 Skull, jaws and partial skeleton of *Teleoceras* — Long Island,
 Kansas (exchange).

DEPARTMENT OF ZOOLOGY.

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

- BIRCH, HUGH T., Chicago.
 2 dragonflies — United States of Colombia, S. A.
 3 cockroaches — United States of Colombia, S. A.
 55 butterflies — United States of Colombia, S. A.
 180 beetles — United States of Colombia, S. A.)
 1 butterfly — East Indies.
 1 butterfly — India.
 1 moth — Florida.
 8 moths — Northern Illinois.
 7 butterflies — Northern Illinois.
- BLOMQUIST, H. L., Chicago.
 1 beetle — Chicago.
- BOA, JOHN S., Chicago.
 3 white Canadian partridges — Canada.

CLARK, B. PRESTON, Boston, Massachusetts.

6 sphinx moths — South America, Africa, and Australia.

DICKINSON COMPANY, THE ALBERT, Chicago.

5 web-spinning mites — Chicago.

FERSON, E. B., Dunedin, Florida.

1 beetle — Dunedin, Florida.

1 grasshopper — Dunedin, Florida.

FIELD, MARSHALL AND SPRAGUE, II, A. A., Chicago.

46 bird skins — various localities in South America.

FIELD MUSEUM OF NATURAL HISTORY.

Collected by William J. Gerhard:

2 water snakes — Illinois.

2 garter snakes — New Lenox, Illinois.

104 millipeds, dragonflies, bugs, butterflies, moths, flies, beetles, bees,
wasps, saw-flies, ichneumon-flies, etc. — Illinois and northern Indiana.

1 water snake — New Lenox, Illinois.

Collected by Carl L. Hubbs:

180 bugs, flies, beetles, bees and parasites — Mineral Springs, Indiana.

1 snake and 1 salamander — Palos Park, Illinois.

108 (5 species) amphibians and fishes — near Mineral Springs, Indiana.

4 species of fishes — Hickory Creek, Illinois.

20 batrachians — near Millers, Indiana.

Collected by Carl L. Hubbs and Leon L. Pray:

60 fish skins, 2 turtles, 125 preserved fishes and accessory material —
Lake Pepin, Mississippi River.

Collected by Carl L. Hubbs and H. Neumann:

75 lagoon fishes — Jackson Park, Chicago.

Purchases:

1 Spanish mountain goat (skin and skull) — Sierra de Alhama.

4 *Pelecanoides georgica* — So. Cumberland Bay, South Georgia.

1 bird of paradise — Sulonik Bay, north coast of Dutch New Guinea.

4 ruffed grouse — Diana, Michigan.

172 land shells — on or near Palawan Island, P. I.

31 South American mammals — Cayenne, French Guiana.

349 bird skins — various localities.

specimens of Wisconsin fishes.

1 golden eagle — Illinois.

1 skull of walrus.

4 cougars — Cone, Arizona.

5 wolves — Senorito, New Mexico.

FRIESSER, JULIUS, Chicago.

1 beetle — Chicago.

1 ichneumon-fly — Chicago.

GRONEMANN, CARL F., Elgin, Illinois.

5 odd mammal skulls — Germany.

GUERET, E. N., Chicago.

10 bird-lice from a purple martin — Jackson Park, Chicago.

1 beetle — Jackson Park, Chicago.

1 skeleton of saw-whet owl — Jackson Park, Chicago.

1 skeleton purple martin — Jackson Park, Chicago.

- HANKINSON, T. L., Charleston, Illinois.
158 fishes — Florida and Cuba.
- HUBBS, CARL L., Chicago.
2 beetles — Japan.
115 (7 species) amphibians and reptiles — northern Indiana.
2 log perches — Lake Michigan.
2 lake herring — Winnetka, Illinois.
- JONES, ARTHUR B., Chicago.
6 buffalo — Corbin Park, Newport, New Hampshire.
- KWIAT, A. and BEER, E., Chicago.
11 moths — New York, Illinois and Indiana.
- LILJEBLAD, E., Chicago.
4 water snakes — New Lenox, Illinois.
2 trap-door spiders and 1 nest — southern California.
- LUDLOW, MRS. T. A., Chicago.
11 small shells — Sea of Gallilee.
- MAKOVICKYI, MRS. ANNA SALA, South Oak Park, Illinois.
2084 butterflies, moths and beetles — North and South America, Europe and Asia.
- NARBO, DR. S., Chicago.
72 shells — Stavanger, Norway.
2 shells (with hermit crabs) — San Diego, California.
- NEUMANN, HERBERT, Chicago.
1 darter — Lagoon, Jackson Park, Chicago.
- PAXSON, I., Bluffton, Indiana.
1 common coot — Indiana.
- PSOTA, FRANK, Chicago.
1 tarantula wasp — Kingfisher, Oklahoma.
- RAUCHFUSS, C. F., River Forest, Illinois.
28 shells — California and Florida.
- ROMANO, JOE, Chicago.
2 young rabbit skulls.
- RUTHLING, PAUL D. R., Los Angeles, California.
11 salamanders — San Gabriel Mts., So. California.
7 alligator lizards — vicinity of Los Angeles, California.
- STEVENS, MRS. E. A., San Martin, California.
1 sphinx moth — San Martin, California.
- STEVENS, MRS. K., San Diego, California.
1 tarantula — San Diego, California.
- STODDARD, H. L., Chicago.
1 box turtle — near Mineral Springs, Indiana.
- SWARTZ, MISS E. PAULINE, Chicago.
110 shells — various localities.
- TESSIATORE, JOHN, Chicago.
1 beetle — Chicago.
- TRIGGS, CHARLES W., AND COMPANY, Chicago.
1 lake trout — Lake Huron, off Alpena.

TUNELL, G. G., Evanston, Illinois.

5 lizards — El Paso, Texas.

18 moths, butterflies, tarantulas, jointed spiders, whip-scorpions and centipedes — El Paso, Texas, and California.

UNIVERSITY OF MICHIGAN, Ann Arbor, Michigan.

38 fishes — Hueyapam River, Mexico (exchange).

WILLIAMSON, E. B., Bluffton, Indiana.

1 coot — Indiana.

WOLCOTT, A. B., Chicago.

1 butterfly — Chicago.

1 garter snake — Worth, Illinois.

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Made by O. C. Farrington:

36 negatives, views of gorges, etc.— Maine.

6 negatives, views showing place of fall of Colby meteorite.

Made by Charles B. Cory:

2 negatives, portraits of Buffalo.

Made by Charles F. Millspaugh:

30 negatives, wild flower studies — Ephraim, Wisconsin.

Made by H. W. Nichols:

132 negatives, landscapes, etc.— Natural Bridge, Virginia.

Made by Section:

241 negatives of Museum specimens, 2,867 prints from same.

PINKNEY, THOMAS, Chicago.

12 photographs, views, etc., New Zealand.

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South African Museum, Cape Town	2
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Department of Agriculture, Sydney	1
Department of Mines, Sydney	4
Field Naturalists' Club, Melbourne	1
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Royal Society of New South Wales, Sydney	1
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Department of Interior, Bureau of Science, Manila	8
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Philippine Library, Manila	1
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Roger Williams Park Museum, Providence	1
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Charleston Museum	1
Thornwell Museum, Charleston	1
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Agricultural Experiment Station, Logan	1
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VERMONT	
State Geologist, Burlington	1
University of Vermont, Burlington	4
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Beloit College	2
Milwaukee Public Museum	1
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State Horticultural Society, Madison	2
University of Wisconsin	8

WYOMING

Agricultural Experiment Station, Laramie	1
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Bascom, Florence, Bryn Mawr, Pennsylvania	1
Benedict, Laura Watson, New York City	1
Bent, A. C., Washington, D. C.	9
Beyer, H. Otley, Manila, Philippine Islands	1
Bingham, Hiram, New Haven, Connecticut	2
Boas, Franz, New York City (gift)	1
Brandegge, T. S., Berkeley, California	1
Clark, B. Preston, Cambridge, Massachusetts (gift)	1
Clark, Harold T., Cleveland, Ohio	2
Cockerell, T. D. A., Boulder, Colorado	18
Cole, Fay Cooper, Chicago	1
Eigenmann, Carl H., Bloomington, Indiana	1
Farrington, O. C., Chicago	1
Farwell, Oliver A., Detroit, Michigan	3
Ford, W. E., New Haven, Connecticut	8
Gage, Simon H., Ithaca, New York	3
Garman, Samuel, Cambridge, Massachusetts (gift)	1
Gay, Frederick P., Berkeley, California (gift)	1
Gerhard, W. J., Chicago	5
Goldman, E. A., Washington, D. C.	1
Hall, Julian H., Athens, Illinois (gift)	60
Harris, Gilbert D., Ithaca, New York	1
Heller, A. A., Chico, California	1
Hodge, Frederick Webb, Washington, D. C.	1
Holland, W. J., Pittsburgh, Pennsylvania	1
Hubbs, Carl L., Chicago	3
Jillson, Willard R., Prestonberg, Kentucky (gift)	2
Kroeber, A. L., San Francisco, California	1
Laufer, Berthold, Chicago	9
Liljeblad, Emil, Chicago (gift)	1
Maccurdy, George Grant, New Haven, Connecticut	65
Mason, J. Alden, Chicago	8

208 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

Means, Philip Ainsworth, Boston, Massachusetts (gift)	1
Meek, Mrs. Seth E., Chicago (gift)	49
Millspaugh, C. F., Chicago	55
Moorehead, Warren H., Andover, Massachusetts	1
Norton, Arthur H., Portland, Maine	5
Osborn, Henry Fairfield, New York City	21
Osgood, W. H., Chicago	1
Potts, Rufus M., Springfield, Massachusetts (gift)	2
Randall and Company, T. A., Indianapolis, Indiana (gift)	2
Smith, Harlan I., Canada	1
Springer, Frank, Washington, D. C. (gift)	1
Strong, R. M., Nashville, Tennessee (gift)	3
Taubenhaus, J. J., College Station, Texas (gift)	3
Washington, Henry S., Locust, New Jersey	1

ARTICLES OF INCORPORATION.

STATE OF ILLINOIS.

DEPARTMENT OF STATE.

WILLIAM H. HINRICHSEN, *Secretary of State.*

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

Whereas, a Certificate duly signed and acknowledged having been filed in the office of the Secretary of State, on the 16th day of September, A. D. 1893, for the organization of the COLUMBIAN MUSEUM OF CHICAGO, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereto attached.

Now, therefore, I, William H. Hinrichsen, Secretary of State of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said COLUMBIAN MUSEUM OF CHICAGO is a legally organized Corporation under the laws of this State.

In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of State. Done at the City of Springfield, this 16th day of September, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the United States the one hundred and eighteenth.

W. H. HINRICHSEN,

[SEAL.]

Secretary of State.

TO HON. WILLIAM H. HINRICHSEN,

SECRETARY OF STATE:

SIR:

We, the undersigned citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and that for the purposes of such organization we hereby state as follows, to-wit:

1. The name of such corporation is the "COLUMBIAN MUSEUM OF CHICAGO."

2. The object for which it is formed is for the accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating Art, Archaeology, Science and History.

3. The management of the aforesaid museum shall be vested in a Board of FIFTEEN (15) TRUSTEES, five of whom are to be elected every year.

4. The following named persons are hereby selected as the Trustees for the first year of its corporate existence:

Ed. E. Ayer, Charles B. Farwell, George E. Adams, George R. Davis, Charles L. Hutchinson, Daniel H. Burnham, John A. Roche, M. C. Bullock, Emil G. Hirsch,

James W. Ellsworth, Allison V. Armour, O. F. Aldis, Edwin Walker, John C. Black and Frank W. Gunsaulus.

5. The location of the Museum is in the City of Chicago, County of Cook, and State of Illinois.

(Signed),

George E. Adams, C. B. Farwell, Sidney C. Eastman, F. W. Putnam, Robert McMurdy, Andrew Peterson, L. J. Gage, Charles L. Hutchinson, Ebenezer Buckingham, Andrew McNally, Edward E. Ayer, John M. Clark, Herman H. Kohlsaat, George Schneider, Henry H. Getty, William R. Harper, Franklin H. Head, E. G. Keith, J. Irving Pearce, Azel F. Hatch, Henry Wade Rogers, Thomas B. Bryan, L. Z. Leiter, A. C. Bartlett, A. A. Sprague, A. C. McClurg, James W. Scott, Geo. F. Bissell, John R. Walsh, Chas. Fitzsimmons, John A. Roche, E. B. McCagg, Owen F. Aldis, Ferdinand W. Peck, James H. Dole, Joseph Stockton, Edward B. Butler, John McConnell, R. A. Waller, H. C. Chatfield-Taylor, A. Crawford, Wm. Sooy Smith, P. S. Peterson, John C. Black, Jno. J. Mitchell, C. F. Gunther, George R. Davis, Stephen A. Forbes, Robert W. Patterson, Jr., M. C. Bullock, Edwin Walker, George M. Pullman, William E. Curtis, James W. Ellsworth, William E. Hale, Wm. T. Baker, Martin A. Ryerson, Huntington W. Jackson, N. B. Ream, Norman Williams, Melville E. Stone, Bryan Lathrop, Eliphalet W. Blatchford, Philip D. Armour.

STATE OF ILLINOIS }
COOK COUNTY } ss.

I, G. R. MITCHELL, a NOTARY PUBLIC in and for said County, do hereby certify that the foregoing petitioners personally appeared before me and acknowledged severally that they signed the foregoing petition as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this 14th day of September, 1893.

G. R. MITCHELL,
[SEAL.] NOTARY PUBLIC, COOK COUNTY, ILL.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the corporate members held the 25th day of June, 1894, the name of the COLUMBIAN MUSEUM was changed to FIELD COLUMBIAN MUSEUM. A certificate to this effect was filed June 26, 1894, in the office of the Secretary of State for Illinois.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the corporate members held the 8th day of November, 1905, the name of the FIELD COLUMBIAN MUSEUM was changed to FIELD MUSEUM OF NATURAL HISTORY. A certificate to this effect was filed November 10, 1905, in the office of the Secretary of State for Illinois.

AMENDED BY-LAWS.

(JUNE 12, 1916.)

ARTICLE I.

MEMBERS.

SECTION 1. Members shall be of five classes, Annual Members, Corporate Members, Life Members, Patrons and Honorary Members.

SEC. 2. Annual Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of ten dollars (\$10.00), payable within thirty days after notice of election, and within thirty days after each recurring annual date. The failure of any person to make such initiatory payment and such annual payments within said time shall, at the option of the Board of Trustees, be sufficient grounds for the forfeiture of an annual membership.

This said annual membership shall entitle the member to:

First.— Free admittance for the member and family, to the Museum on any day.

Second.— Ten tickets every year, admitting the bearer to the Museum on pay days.

Third.— A copy of all publications of the Museum when requested.

Fourth.— Invitations to all special exhibits, receptions, lectures, or other functions which may be given at the Museum.

SEC. 3. The Corporate Members shall consist of the persons named in the articles of incorporation, and of such other persons as shall be chosen from time to time by the Board of Trustees at any of its meetings, upon the recommendation of the Executive Committee; provided, that such persons named in the articles of incorporation shall, within ninety days from the adoption of these By-Laws, and persons hereafter chosen as Corporate Members shall, within ninety days of their election, pay into the treasury the sum of twenty dollars (\$20.00) or more. The failure of any person to make such payment within said time, shall, at the option of the Board of Trustees, be ground for forfeiture of his corporate membership. Corporate Members becoming Life Members, Patrons or Honorary Members shall be exempt from dues. Annual meetings of said Corporate Members shall be held at the same place and on the same day that the annual meeting of the Board of Trustees is held.

SEC. 4. Any person paying into the treasury the sum of five hundred dollars (\$500.00), at any one time, shall, upon the unanimous vote of the Board, become a Life Member. Life Members shall be exempt from all dues.

SEC. 5. Patrons shall be chosen by the Board upon recommendation of the Executive Committee from among persons who have rendered eminent service to

the Museum. They shall be exempt from all dues, and, by virtue of their election as Patrons, shall also be Corporate Members.

SEC. 6. Honorary Members shall be chosen by the Board from among persons who have rendered eminent service to science, and only upon unanimous nomination of the Executive Committee. They shall be exempt from all dues.

ARTICLE II.

BOARD OF TRUSTEES.

SECTION 1. The Board of Trustees shall consist of fifteen members. The respective members of the Board now in office, and those who shall hereafter be elected, shall hold office during life. Vacancies occurring in the Board shall be filled at a regular meeting of the Board, upon the nomination of the Executive Committee made at a preceding regular meeting, by a majority vote of the members of the Board present.

SEC. 2. Regular meetings of the Board shall be held on the second Monday of each month. Special meetings may be called at any time by the President, and shall be called by the Secretary upon the written request of three Trustees. Five Trustees shall constitute a quorum, except for the election of officers or the adoption of the Annual Budget, when seven Trustees shall be required, but meetings may be adjourned by any less number from day to day, or to a day fixed, previous to the next regular meeting.

SEC. 3. Reasonable written notice, designating the time and place of holding meetings, shall be given by the Secretary.

ARTICLE III.

HONORARY TRUSTEES

SECTION 1. As a mark of respect, and in appreciation of services performed for the Institution, those Trustees who by reason of inability, on account of change of residence, or for other cause or from indisposition to serve longer in such capacity shall resign their place upon the Board, may be elected, by a majority of those present at any regular meeting of the Board, an Honorary Trustee for life. Such Honorary Trustee will receive notice of all meetings of the Board of Trustees, whether regular or special, and will be expected to be present at all such meetings and participate in the deliberations thereof, but an Honorary Trustee shall not have the right to vote.

ARTICLE IV.

OFFICERS.

SECTION 1. The officers shall be a President, a First Vice-President, a Second Vice-President, a Secretary, an Assistant Secretary and a Treasurer. They shall be chosen by ballot by the Board of Trustees, a majority of those present and voting being necessary to elect. The President, the First Vice-President, and the Second Vice-President shall be chosen from among the members of the Board of Trustees. The meeting for the election of officers shall be held on the second Monday of January of each year, and shall be called the Annual Meeting.

SEC. 2. The officers shall hold office for one year, or until their successors are elected and qualified, but any officer may be removed at any regular meeting of the

Board of Trustees by a vote of two-thirds of all the members of the Board. Vacancies in any office may be filled by the Board at any meeting.

SAC. 3. The officers shall perform such duties as ordinarily appertain to their respective offices, and such as shall be prescribed by the By-Laws, or designated from time to time by the Board of Trustees.

ARTICLE V.

THE TREASURER.

SECTION 1. The Treasurer shall be custodian of the funds of the Corporation, except as hereinafter provided. He shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents. But no warrants shall be issued, except in conformity with a regularly prepared voucher, giving the name of the payee and stating the occasion for the expenditure, and verified and approved as hereinafter prescribed. It shall be no part of the duties of the Treasurer to see that the warrants have been issued in conformity with such vouchers.

SAC. 2. The securities and muniments of title belonging to the corporation shall be placed in the custody of some Trust Company of Chicago to be designated by the Board of Trustees, which Trust Company shall collect the income and principal of said securities as the same become due, and pay same to the Treasurer, except as hereinafter provided. Said Trust Company shall allow access to and deliver any or all securities or muniments of title to the joint order of the following officers, namely: The President or one of the Vice-Presidents, jointly with the Chairman, or one of the Vice-Chairmen, of the Finance Committee of the Museum.

SAC. 3. The Treasurer shall give bond in such amount, and with such sureties, as shall be approved by the Board of Trustees.

SAC. 4. All vouchers executed for the payment of liabilities incurred in the administration of the Museum, shall be verified by the Auditor, and approved for payment by the Director, and the Chairman of the Administration Committee. All vouchers executed for expenditures for the construction or reconstruction of the Museum building, or buildings, shall be verified by the Auditor and approved for payment by the Chairman of the Building Committee. All vouchers executed in connection with the investments of the Corporation, or, in any way having to do with the endowment funds of the Corporation, shall be verified by the Auditor and approved for payment by the Chairman of the Finance Committee.

SAC. 5. The Harris Trust and Savings Bank of Chicago shall be Custodian of "The N. W. Harris Public School Extension of Field Museum" fund. The Bank shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents. But no warrant shall be issued, except in conformity with a regularly prepared voucher, giving the name of the payee and stating the occasion for the expenditure, and verified and approved by the Auditor, the Director and Chairman of the Administration Committee. It shall be no part of the duties of the said Custodian to see that the warrants have been issued in conformity with such vouchers.

ARTICLE VI.

THE DIRECTOR.

SECTION 1. The Board of Trustees shall elect a Director of the Museum, who shall remain in office until his successor shall be elected. He shall have immediate charge and supervision of the Museum, and shall control the operations of the institution, subject to the authority of the Board of Trustees and its Committees. The Director shall be the official medium of communication between the Board, or its Committees, and the scientific staff and maintenance force.

SEC. 2. There shall be four scientific departments of the Museum — Anthropology, Botany, Geology and Zoology, each under the charge of a Curator, subject to the authority of the Director. The Curators shall be appointed by the Board upon the recommendation of the Director, and shall serve during the pleasure of the Board. Subordinate staff officers in the scientific departments shall be appointed and removed by the Director upon the recommendation of the Curators of the respective Departments. The Director shall have authority to employ and remove all other employees of the Museum.

SEC. 3. The Director shall make report to the Board at each regular meeting, recounting the operations of the Museum for the previous month. At the Annual Meeting, the Director shall make an Annual Report, reviewing the work of the Museum for the previous year, which Annual Report shall be published in pamphlet form for the information of the Trustees and Members, and for free distribution in such number as the board may direct.

ARTICLE VII.

AUDITOR.

SECTION 1. The Board shall appoint an Auditor, who shall hold his office during the pleasure of the Board. He shall keep proper books of account, setting forth the financial condition and transactions of the Corporation, and of the Museum, and report thereon at each regular meeting, and at such other times as may be required by the Board. He shall certify to the correctness of all vouchers for the expenditure of the money of the corporation.

ARTICLE VIII.

COMMITTEES.

SECTION 1. There shall be six Committees as follows: Finance, Building, Auditing, Pension, Administration and Executive.

SEC. 2. The Finance, Auditing and Pension Committees shall each consist of three members, and the Building and Administration Committees shall each consist of five members. All members of these five Committees shall be elected by ballot by the Board at the Annual Meeting, and shall hold office for one year, and until their successors are elected and qualified. In electing the members of these Committees, the Board shall designate the Chairman and Vice-Chairman by the order in which the members are named in the respective Committee; the first member named shall be Chairman, the second named the Vice-Chairman, and the third named, Second Vice-Chairman, succession to the Chairmanship being in this order in the event of the absence or disability of the Chairman.

SEC. 3. The Executive Committee shall consist of the President of the Board, the Chairman of the Finance Committee, the Chairman of the Building Committee,

the Chairman of the Administration Committee, the Chairman of the Auditing Committee, the Chairman of the Pension Committee, and two other members of the Board to be elected by ballot at the Annual Meeting.

SEC. 4. Four members shall constitute a quorum of the Executive Committee; three members shall constitute a quorum of the Administration Committee, and in all other standing Committees, two members shall constitute a quorum. In the event that, owing to the absence or inability of members, a quorum of the regularly elected members cannot be present at any meeting of any Committee, then the Chairman thereof, or his successor, as herein provided, may summon any member of the Board of Trustees to act in place of the absentee.

SEC. 5. The Finance Committee shall have supervision of investing the endowment and other permanent funds of the Corporation, and the care of such real estate as may become its property. It shall have authority to invest, sell, and re-invest funds, subject to the approval of the Board.

SEC. 6. The Building Committee shall have supervision of the construction, reconstruction, and extension of any and all buildings used for Museum purposes.

SEC. 7. The Executive Committee shall be called together from time to time as the Chairman may consider necessary, or as he may be requested to do by three members of the Committee, to act upon such matters affecting the administration of the Museum as cannot await consideration at the Regular Monthly Meetings of the Board of Trustees. It shall, before the beginning of each fiscal year, prepare and submit to the Board an itemized Budget, setting forth the probable receipts from all sources for the ensuing year, and make recommendations as to the expenditures which should be made for routine maintenance and fixed charges. Upon the adoption of the Budget by the Board, the respective Committees shall be considered as authorized to make the expenditures detailed therein. No increase in the expenditures under any items of the Budget shall be made, except by authority of the Board of Trustees, but the Executive Committee shall have authority, in cases of emergency, to expend a further total sum not exceeding two thousand dollars in any one month.

SEC. 8. The Administration Committee shall have general supervision of the affairs of the Museum. The Committee shall hold one meeting each month with the Director at the Museum within a week preceding each Monthly Meeting of the Board of Trustees.

SEC. 9. The Auditing Committee shall have supervision over all accounting and bookkeeping, and full control of the financial records. It shall cause the same, once each year, or oftener, to be examined by an expert individual or firm, and shall transmit the report of such expert individual or firm to the Board at the next ensuing regular meeting after such examination shall have taken place.

SEC. 10. The Pension Committee shall determine by such means and processes as shall be established by the Board of Trustees to whom and in what amount the Pension Fund shall be distributed. These determinations or findings shall be subject to the approval of the Board of Trustees.

SEC. 11. The Chairman of each Committee shall report the acts and proceedings thereof at the next ensuing regular meeting of the Board.

SEC. 12. The President shall be ex-officio a member of all Committees and Chairman of the Executive Committee. Vacancies occurring in any Committee may be filled by ballot at any regular meeting of the Board.

ARTICLE IX.

NOMINATING COMMITTEE.

SECTION 1. At the November meeting of the Board, each year a Nominating Committee of three shall be chosen by lot. Said Committee shall make nominations for membership of the Finance Committee, the Building Committee, the Administration Committee, the Auditing Committee, and the Pension Committee, and for two members of the Executive Committee, from among the Trustees, to be submitted at the ensuing December meeting and voted upon at the following Annual Meeting in January.

ARTICLE X.

SECTION 1. Whenever the word "Museum" is employed in the By-Laws of the Corporation, it shall be taken to mean the building in which the Museum as an Institution is located and operated, the material exhibited, the material in study collections, or in storage, furniture, fixtures, cases, tools, records, books, and all appurtenances of the Institution, and the workings, researches, installations, expenditures, field work, laboratories, library, publications, lecture courses, and all scientific and maintenance activities.

SEC. 2. These By-Laws may be amended at any regular meeting of the Board of Trustees by a two-thirds vote of all the members present, provided the amendment shall have been proposed at a preceding regular meeting.

HONORARY MEMBERS.

EDWARD E. AYER	CHARLES B. CORY
MRS. TIMOTHY B. BLACKSTONE	HARLOW N. HIGINBOTHAM
STANLEY McCORMICK	

PATRONS.

ALLISON V. ARMOUR	GEORGE MANIERRE
EDWARD B. BUTLER	CHARLES H. MARKHAM
ALBERT M. COLLINS	JOHN S. MILLER
LEE GARNETT DAY	JOHN BARTON PAYNE
ERNEST R. GRAHAM	HOMER E. SARGENT
FRANK W. GUNSAULUS	FREDERICK J. V. SKIFF
CHARLES L. HUTCHINSON	WILLARD A. SMITH
VERNON SHAW KENNEDY	

CORPORATE MEMBERS.

ALDIS, OWEN F.
ARMOUR, ALLISON V.
AYER, EDWARD E.

BARTLETT, A. C.
BLAIR, WATSON F.
BUTLER, EDWARD B.

CHALMERS, W. J.
CHATFIELD-TAYLOR, H. C.
CLARK, JOHN M.
COLLINS, ALBERT M.
CRANE, RICHARD T.

DAY, LEE GARNETT

EASTMAN, SIDNEY C.
ELLSWORTH, JAMES W.

FIELD, MARSHALL
FIELD, STANLEY

GAGE, LYMAN J.
GETTY, HENRY H.
GRAHAM, ERNEST R.
GUNSAULUS, FRANK W.
GUNTHER, C. F.

HIGINBOTHAM, H. N.
HUTCHINSON, CHARLES L.

JONES, ARTHUR B.

KEEP, CHAUNCEY
KENNEDY, VERNON SHAW
KOHLSAAT, HERMAN H.

MCCORMICK, CYRUS H.
MARKHAM, CHARLES H.
MANIERRE, GEORGE
MILLER, JOHN S.
MITCHELL, JOHN J.

PAYNE, JOHN BARTON
PECK, FRED. W.
PORTER, GEORGE F.

RYERSON, MARTIN A.

SARGENT, HOMER E.
SKIFF, FREDERICK J. V.
SMITH, WILLARD A.
SPRAGUE, A. A., 2ND
STONE, MELVILLE E.

DECEASED, 1917.

ADAMS, GEORGE E.
FIELD, HENRY

LIFE MEMBERS.

ALDIS, OWEN F.
ALLEN, BENJAMIN

BAKER, MISS ISABELLE
BANKS, ALEXANDER F.
BARRELL, FINLEY
BARRETT, MRS. A. D.
BARRETT, ROBERT L.
BARTLETT, A. C.

BASSFORD, LOWELL C.
BEALE, WILLIAM G.
BILLINGS, FRANK
BLACKSTONE, MRS. TIMOTHY B.
BLAINE, MRS. EMMONS

BLAIR, HENRY A.
BLAIR, WATSON F.
BOOTH, VERNON
BOYNTON, C. T.
BREWSTER, WALTER S.
BROWN, WILLIAM L.
BUFFINGTON, EUGENE J.
BUTLER, EDWARD B.
BYLLESBY, H. M.

CARR, CLYDE M.
CARRY, EDWARD F.
CARTON, L. A.
CHALMERS, WILLIAM J.
CLAY, JOHN
COBE, IRA M.
CRAMER, CORWITH
CRANE, CHARLES RICHARD
CRANE, RICHARD T.
CUDAHY, JOSEPH M.
CUMMINGS, D. MARK

DAU, J. J.
DAWES, CHARLES G.
DAY, ALBERT M.
DEERING, CHARLES
DEERING, JAMES
DELANO, FREDERIC A.
DICK, ALBERT BLAKE

DONNELLEY, REUBEN H.
DONNELLEY, THOMAS E.
DRAKE, TRACY C.

ECKHART, B. A.

FAIR, ROBERT M.
FARWELL, WALTER
FAY, C. N.
FIELD, MARSHALL
FIELD, STANLEY
FORSYTH, ROBERT
FULLER, WILLIAM A.

GARTZ, A. F.
GARY, JOHN W.
GRISCOM, CLEMENT A.
GROMMES, JOHN B.

HAMILL, ERNEST A.
HILL, LOUIS W.
HOROWITZ, L. J.
HOXIE, MRS. JOHN R.
HUGHITT, MARVIN
HULBURD, CHARLES H.
HUTCHINSON, C. L.

INSULL, SAMUEL

JOHNSON, MRS. ELIZABETH AYER
JOHNSON, FRANK S.
JONES, ARTHUR B.

KEEP, CHAUNCEY
KELLEY, WILLIAM V.
KING, FRANCIS
KING, JAMES G.
KIRK, WALTER RADCLIFFE

LAMONT, ROBERT P.
LAWSON, VICTOR
LOGAN, SPENCER H.

McCORMICK, MRS.
McCORMICK, CYRUS H.
McCORMICK, HAROLD F.
McELWEE, ROBERT H.
McLENNAN, D. R.
MacVEAGH, FRANKLIN
MARK, CLAYTON
MASON, WILLIAM S.
MITCHELL, J. J.
MUNROE, CHARLES A.

NEWELL, A. B.

ORR, ROBERT M.

PAM, MAX
PATTEN, HENRY J.

PIKE, EUGENE S.
PORTER, GEORGE F.
PORTER, H. H.

RAWSON, FREDERICK H.
REAM, MRS. CAROLINE P.
REVELL, ALEXANDER H.
REYNOLDS, GEORGE M.
ROBINSON, THEODORE W.

ROSENWALD, JULIUS
RUNNELLS, JOHN S.
RUSSELL, EDMUND A.
RUSSELL, EDWARD P.
RYERSON, MRS. CARRIE H.
RYERSON, EDWARD L.
RYERSON, MARTIN A.

SHEDD, JOHN G.
SIMPSON, JAMES
SMITH, ORSON
SPOOR, JOHN A.
SPRAGUE, A. A., 2ND
STILLWELL, HOMER A.
STOUT, FRANK D.
STURGES, GEORGE
SWIFT, CHARLES H.
SWIFT, EDWARD F.
SWIFT, LOUIS F.

THORNE, CHARLES H.
THORNE, GEORGE R.
THORNE, ROBERT J.

WILLARD, ALONZO J.
WILSON, WALTER H.

DECEASED, 1917.

ADAMS, GEORGE E.
FIELD, HENRY
FRANTZIUS, FRITZ VON
ISHAM, MRS. KATHERINE PORTER

ANNUAL MEMBERS.

ADAMS, CYRUS H.
ADAMS, MILWARD
ALLERTON, ROBERT H.
ARMOUR, GEORGE A.

BAILEY, EDWARD P.
BECKER, A. G.
BILLINGS, C. K. G.
BOAL, CHARLES T.
BURLEY, CLARENCE A.

COMSTOCK, WILLIAM C.
COONLEY-WARD, MRS. L. A.
CUMMINGS, E. A.
CURTIS, D. H.

EISENDRATH, W. N.

FORGAN, JAMES B.
FRANK, HENRY L.
FULLER, O. F.
FÜRST, CONRAD

GAYLORD, FREDERIC
GLESSNER, J. J.
GOODRICH, A. W.
GORDON, EDWARD K.
GREY, CHARLES F.
GURLEY, W. W.

HARRIS, GEORGE B.
HARRIS, JOHN F.
HASKELL, FREDERICK T.
HIBBARD, WILLIAM G., JR.
HITCHCOCK, R. M.
HOLT, GEORGE H.
HOPKINS, JOHN P.

JENKINS, GEORGE H.
JONES, J. S.

KEITH, W. SCOTT
KIMBALL, EUGENE S.

KIMBALL, MRS. MARK

LAMB, FRANK H.
LAY, A. TRACY
LEE, BLEWETT
LEIGH, EDWARD B.
LINCOLN, ROBERT T.
LINN, W. R.
LOGAN, F. G.
LORD, J. B.
LOWDEN, FRANK O.
LYTTON, HENRY C.

McCREA, W. S.
McWILLIAMS, LAFAYETTE
MacFARLAND, HENRY J.
MAGEE, HENRY W.
MANSURE, E. L.
MAYER, LEVY
MEYER, MRS. M. A.
MOORE, N. G.
MULLIKEN, A. H.

NATHAN, ADOLPH
NOLAN, JOHN H.
NORTON, O. W.

OSBORN, HENRY A.

PALMER, PERCIVAL B.
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FIELD MUSEUM OF NATURAL HISTORY.

PUBLICATION 202.

REPORT SERIES.

VOL. V, No. 4.

ANNUAL REPORT OF THE DIRECTOR

TO THE
BOARD OF TRUSTEES

FOR THE YEAR 1918.



CHICAGO, U. S. A.

January, 1919.

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CONTENTS.

	PAGE
Board of Trustees	226
Officers and Committees	227
Staff of the Museum	228
Report of the Director	229
Maintenance	231
Publications	231
Library	231
Cataloguing, Inventorying, and Labeling	233
Accessions	235
Installation and Permanent Improvement	241
The N. W. Harris Public School Extension	252
Photography and Illustration	253
Printing	254
Financial Statement'	255
Attendance and Receipts	257
Accessions	258
Department of Anthropology	258
Department of Botany	259
Department of Geology	261
Department of Zoölogy	264
Section of Photography	264
The Library	264
Articles of Incorporation	277
Amended By-Laws	279
List of Honorary Members and Patrons	285
List of Corporate Members	286
List of Life Members	287
List of Annual Members	289
The Sculpture of the new Museum building	291

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January 1, 1919.

ANNUAL REPORT OF THE DIRECTOR.

1918

To the Trustees of Field Museum of Natural History:

I have the honor to present a report of the operations of the Museum for the year ending December 31, 1918.

The negotiations of the National Government to secure the new Museum structure for hospital purposes, the contract to this end which was entered into, the resulting increase in building operations in accordance with the terms of the contract and the subsequent sudden cancellation by the Government of the contract following the European armistice had naturally a confusing and disturbing effect upon the affairs of the Museum during the later part of the year. The preparations for the transfer to the new building had been underway for sometime, but work of this character was more actively prosecuted after the contract with the Government had been entered into and the methods of packing were altered in view of the expectation to store the material for several years, or during the operation of the contract or lease. The probability as now appears, that the transfer to the new building may take place next year and possibly in the autumn, will require continued and assiduous efforts in preparation for this event that will leave little else to be done in the old building. The progress so far made and the methods employed may be said to be satisfactory but not remarkable.

The Museum has felt the common influence of the war upon its economic affairs and, operating upon a fixed income, has reduced its expenditures as far as possible to the necessities of maintenance. The high prices of fuel and of materials of every variety entering into the every day affairs of the Institution have, except for reserves, practically exhausted the annual receipts and left little to be recorded in the way of new or progressive activities.

To what may be ascribed the large decrease in attendance is doubtful. The public in some way appears to have gained the impression, which it has not been easy to correct, that the present building has been closed or was in a state of some confusion, because of preparations for immediate removal to and storage of its contents in the new building, which was to be used for three years as a Government hospital. This may be regarded as one reason. Probably, however, the falling off in attendance has been due very largely to the consuming interest of the public in the war and

in the circumstances reaching into every home immediately or indirectly associated with it. People generally have not felt at sufficient ease and unconcern to visit places of the character of the Museum for pleasure, pastime or study. At the same time the extent of the decrease in attendance, even with these allowances fully made, is still unaccountable.

President Field returned from his duties in France in September after a year's service. Trustee Sprague, Major of Infantry, has received his discharge from the Army and has returned to Chicago. Trustee Marshall Field, Captain of Artillery, is still on duty in France.

Dr. Frank W. Gunsaulus, Pastor of the Central Church and President of Armour Institute, accepted election as a member of the Board of Trustees of the Museum, filling the vacancy caused by the death of Honorable George E. Adams. Mr. William Wrigley, Jr., prominent manufacturer, has been elected to fill the vacancy caused by the death of Mr. Henry Field.

The general staff of the Museum saw fit to recognize the Twenty-fifth Anniversary of the Director's appointment by presenting him with an engrossed Appreciation signed by the entire personnel; an act which was sincerely appreciated by its recipient.

The Assistant Curator of Economic Botany with several laboratory assistants transferred the activities of the Mrs. Stanley Field Plant Reproduction section to Miami, Florida, in October, where accommodations were secured from the United States Agricultural Department in its laboratory there, to carry on the work of reproducing the plants of that section; the expedition expecting to be absent six months or more. Reports from Assistant Curator Dahlgren reflect a gratifying outcome of this enterprise.

Acknowledgment is made of the contributions of funds from Mrs. T. B. Blackstone and from Mr. Charles R. Crane, to defray the cost of a publication in the Museum series by Curator Laufer of the Department of Anthropology, entitled: "Sino-Iranica; Chinese Contributions to the History of the Civilization of Ancient Iran."

Somewhat extensive reference is made elsewhere in this report to the Japanese painting presented to the Museum by Trustee Gunsaulus; a most valuable gift from both an ethnologic and artistic standpoint.

The Finance Committee of the Museum authorized an arrangement to finance the subscriptions of the employes of the Institution to the Third and Fourth Liberty Loan bond issues, under which arrangement a most gratifying subscription resulted, both as to individuals and the amounts taken.

The Museum sustained a signal loss in the death of Mr. Odell Edward Lansing, Jr., Keeper-of-the-Herbarium, Department of Botany.

Mr. Lansing had been in the service of the Museum twenty-three years during which his conscientious, untiring devotion to his work, and cheerful presence, had endeared him to all his associates. He was a diligent and discriminating collector, making his special field of labor the Plant Life of the Chicago Basin, in Illinois and Indiana. To this he devoted all his spare time and often his periods of vacation. He also collected in various parts of Illinois, Michigan and Wisconsin, and in the Ozark region of Missouri. In 1903, on a commission from the Museum, he made a thorough and comprehensive botanical exploration of all the sand keys of Florida from Key West westward. His original collections (4,563 specimens) are preserved in the herbarium of the Museum, and duplicates in various herbaria of America and Europe.

MAINTENANCE. — The annual Budget Authorized by the Board of Trustees provided the sum of \$158,496.00 for the maintenance of the Museum for the fiscal year. The actual amount expended was \$137,740.00, leaving a balance within the anticipated expenses for the year of \$20,756.00. In addition to the cost of maintenance the sum of approximately \$5,000.00 was expended for collections and packing supplies, that brought the total to \$142,740.00.

PUBLICATIONS. — During the year four publications were issued, comprising parts of four volumes, details of which follow:

- Pub. 197.— Zoological Series, Vol. XIII, Part II, No. 1. The Birds of the Americas. By C. B. Cory. March 1918. 315 pages, 1 colored plate. Edition 1,150.
- Pub. 198.— Zoological Series, Vol. XII, No. 2. Notes on Fishes from the Athi River in British East Africa. By Carl L. Hubbs. January 1918. 4 pages, 3 halftones. Edition 1,000.
- Pub. 199.— Botanical Series, Vol. IV, No. 1. New Species of *Xanthium* and *Solidago*. By C. F. Millspaugh and E. F. Sherff. April 1918. 7 pages, 6 halftones. Edition 1,000.
- Pub. 200.— Report Series, Vol. V, No. 3. Annual Report of the Director for the year 1917. January 1918. 74 pages, 11 halftones. Edition, 2,000.

These publications were distributed to individuals and institutions whose names appear on the Domestic mailing list. On account of the enhanced sea risk a few copies of the Annual Report only were sent abroad.

THE LIBRARY. — The books and pamphlets accessioned during the year were 1,484, a decrease from preceding years, but this is amply explained by war conditions. In the interest of general economy and the desire to cooperate with the War Industries Board in the saving of paper, publishers have issued limited editions. Periodicals and serials that

had been previously received as gifts or exchanges were discontinued. Foreign exchanges were scant and irregular. The total number of books and pamphlets in the Library is 71,020, which are distributed as follows:

General Library	44,750
Department of Anthropology	3,616
Department of Botany	7,476
Department of Geology	10,460
Department of Zoology	4,718

Purchases were made of forty-six books necessary for work in hand in the departmental libraries. Among those received are: Crawford's History of the Indian Archipelago, 1820; Im Thurm's Among the Indians of Guiana, 1884; Rickard's Ruins of Mexico; Robelo's Diccionario de Aztequismos; Walters' Ancient Pottery; Tutton's Crystallography; Pennant's Synopsis of Quadrupeds, 1771. Through the continued generosity of Mr. Edward E. Ayer, a handsomely bound and illustrated copy of Lord Rothschild's Extinct Birds, and continuations of Matthews' Birds of Australia were purchased for the Ayer Ornithological Library. Mr. William S. McCrea donated a copy of Herrick's Audubon the Naturalist. Interesting additions were also received from Mr. William J. Chalmers, Mr. Charles L. Freer, Detroit, Mr. J. Nilsen Laurvik, San Francisco, Mr. Elmer D. Merrill, Manila, Mr. Edward S. Morse, Salem, Mr. James Weir, Missoula. The general activities of the Library have continued in as earnest and energetic a manner as existing conditions permitted. New work has not been undertaken during the year, but the development of resources at hand has progressed. The steadily rising cost of binding materials made it impractical to bind the usual number of books, and only 227 periodicals and serials were bound during the year. There were written and filed in the catalogues 15,612 cards. Twelve monthly installments of approximately a thousand cards each of the John Crerar Library were received and filed. Preparatory to moving to the new building a general weeding out has been made of literature no longer of use in the work of the Museum. Much of this material had been accessioned before it was definitely determined that the scope of the Museum would be confined to natural history. For lack of shelf-room these books have been packed in boxes for some years. What is of exchange value was checked off the records and repacked; all duplicate material was carefully examined and what was of importance for exchange purposes was also packed. All of these forty-eight boxes were properly labeled and stored ready for shipment. What was fit only for waste paper was sold. In all 1,780 numbers were checked off the records, which reduces to 71,020 the total number of books and pamphlets in the Library.

DEPARTMENTAL CATALOGUING, INVENTORYING, AND LABELING. — During the current year the work of cataloguing in the Department of Anthropology has been carried on as usual, and the total number of catalogue cards prepared amounts to 5,441. These cards are distributed over the various divisions as follows: China, India and Philippines 47; Melanesian Ethnology 984; North American Ethnology 594; Mexican and South American Archæology 598; and Physical Anthropology 3,218. All these cards have been entered in the inventory books of the Department, which now number 38. The number of annual accessions amounts to 16, of these 11 have been entered. The total number of catalogue cards entered from the opening of the first volume amounts to 153,111. The photographer made 63 negatives and supplied 503 prints to the Department. There were added to the label file 224 new label cards. A total number of 2,309 labels was turned out by the printer for use in the exhibition cases of the Department. These labels are distributed as follows: China and Philippines 20; Melanesian Ethnology 129; and Mexican and South American Archæology 2,160. The printer further supplied the Department with 2,050 catalogue cards and 5,600 shipping labels. The cataloguing of the collections secured under the auspices of the Joseph N. Field Expedition is now completed. All together 11,390 cards are written on this collection. General case-labels have been installed in all cases of Halls 2 and 3 and those in the East Court. The condensation and reinstallation of the Philippine collections, carried on during 1917, made necessary the relabeling of a large portion of the exhibits. This was completed early in the spring by the labeling of sixteen cases covering the Bukidnon tribes of Northern Mindanao and the Bagobo of Davao Gulf. Labels have been written for thirty-five specimens in the case of Egyptian bronzes. The general case labels for six cases of Egyptian archæology installed last year have been properly placed. The Ushebti figures have been classified, and the translations of their inscriptions made by Dr. Allen will be utilized for the preparation of the labels. The Canopic jars have also been carefully studied, classified, and inscriptions read. Under an agreement with the Department of Egyptology at the University of Chicago the Museum received for some time the services of Dr. Allen for the translation of Egyptian inscriptions in exchange for Egyptian material of the University to be treated or repaired by the Department's preparator. Dr. Allen's notes will form a useful foundation for the labels to be prepared for this section. Since the first of June, the Assistant Curator of Mexican and South American Archæology has concerned himself almost entirely with the Zavaleta collection of Calchaqui archæology. This collection consisted of 4,565 numbers; two hundred and

seventy-one of these had already been catalogued in the Peruvian collection, the remaining 4,294 have been numbered in 2,120 catalogue numbers; about four hundred of these have been catalogued to date.

In the Department of Botany the entries made number 7,754, bringing the total entries to 477,490. The permanent card reference-indexes maintained in the Department of Botany, and their composition, are as follows:

	Number of Cards Augmented 1918	Total
Index of Botanical Species	2,500	147,650
Index to Common names of plants	1,200	19,950
Index to Yucatan plants	160	6,362
Index to Euphorbiace	85	4,225
Department Labels	262	3,100
Index to Collectors and Collections	95	9,850
Index to Geographic collections	16	2,750
Index to Botanical Titles (articles)	178	1,500
Index to Department Library	137	8,800
Index to Illinois Flora	900	900
Index to Hand Specimens of Woods	800	800
Index to Cases Installed		595
Index to Photographs		600
	6,333	207,082

All accessions in the Department of Geology have been duly catalogued as received. The total record of catalogue entries to date is as follows: Number of Record Books 22; Entries during 1918, 510; Total number of entries to December 31, 1918, 140,429; Total number of cards written 8,018. The Chalmers Crystal collection has been labeled throughout, 166 additional labels having been provided for this purpose. Other series for which new labels have been made are those of Quaternary vertebrates and about 500 miscellaneous specimens of ores and minerals. The whole comprises a total of 745 labels which have been printed and for the most part installed during the year. In addition 168 labels have been prepared and are ready for printing.

Owing to the small number of new accessions in the Department of Zoology the total number of new entries in the catalogues was the smallest in the history of the Department. The total number of regular entries was only 185, of which 155 were in Ornithology and 30 in Mammalogy. In the classified card catalogues, the number of entries also has been limited. In Ornithology about 150 new entries were made and in Mammalogy correction and revision of about 100 cards were made. New exhibition labels to complete the relabeling of the synoptic collection of mammals were received from the printer and in part have been installed, the remainder being held until after removal. The work of re-identifying, re-cataloguing and re-tagging the study collections

of the Division of Ichthyology and Herpetology has proceeded throughout the year. Most of the new material entered and some of the old material has been supplied with tin tags, stamped in the machine purchased for that purpose last year. In the Division of Osteology fifteen skeletons were catalogued and index cards were written for the same. Including the duplicates, 1,700 shell labels were received from the printer. Of this number 1,381 have been installed. There were also installed 133 labels for scorpions, tarantulas, centipedes and silkworms.

The following table shows the work performed on catalogues and the inventorying accomplished:

	Number of Record Books	Total Number of Entries to December 31, 1918	Entries During 1918	Total Number of Cards Written
Department of Anthropology . .	38	153,111	5,441	153,111
Department of Botany . . .	58	477,490	7,754	83,374
Department of Geology . . .	22	140,429	510	8,018
Department of Zoology . . .	40	101,249	789	35,713
The Library	14	108,360	2,640	258,972
Section of Photography . . .	20	119,138	1,299	.....

ACCESSIONS.—The Curator of Anthropology makes the following observations on the painted Japanese screen of the Tosa school presented to the Museum by Dr. Frank W. Gunsaulus in commemoration of the Director's twenty-fifth anniversary of service: The Tosa school, so named for the painter Tsunetaka, a governor of Tosa Province, flourished in the thirteenth century, and in its artistic aspirations was anti-Chinese, cultivating a vigorous nationalism and representing the taste of Japanese aristocracy as developed at the court of Kyoto. The characteristics of the Tosa masters were a magnificent combination of harmonious color and remarkable skill of composition. In conformity with their national tendencies they turned their attention toward historical subjects, and as illustrators of historical incidents or court romances and ceremonies on a grand scale they are peerless in the pictorial annals of Japan. In the epic style of their painted narratives they became for Japan what the rhapsodists of the Homeric poems were for Greece. Their best work is accordingly found on screens and sliding doors which offered the most suitable background for the expression of their inspiring conceptions. Distinguished forms, a delicate finesse of the brush exhibiting a decided affinity with the best miniatures of Persia, and the illustrated missals of our middle ages, a delicate severity of outlines, a certain conventionality of aristocratic sentiment, an incomparable talent for minutest detail in depicting trees, flowers, and birds, vivid, opaque and plastic coloration—these are the predominant traits of Tosa art all of which are reflected in this screen. Art was en-

riched by these masters with a striking innovation which omitted the roofs of the buildings, representing the interiors from a bird's-eye view and blending the surrounding scenery with the domestic events. This principle is felicitously embodied in this painting which depicts three scenes from the famous classical romance *Genji Monogatari* written in A.D. 1004. The scene on the right-hand side shows the hero, Prince Genji, engaged with his friends in a discussion of the character of women. The scene in the upper portion of the centre illustrates Prince Genji gazing through a hedge at a group of ladies in the building. The scene on the left-hand side of the screen represents Genji and his friend To-no-chujo performing a war dance before the emperor in the palace Suzaku-in, accompanied by the orchestra below, of two reed-organs, two flutes, and two drums. The audience is formed by the members of the court seated in a hall on the left-hand side; the women spectators being confined to a special box on a lower level than the men. The characterization of the figures is exquisite, and the technical means employed to this end are of highest quality. In the costumes of four figures the designs are embossed or raised in relief in the paper, while a rich scale of pigments is set off from a gold-speckled brown background. The whole composition is as monumental and artistic as the treatment of details is refined, accurate, and instructive. This painting personifies a live source of inspiration for the study of ancient Japanese life, customs, and decorative forms, and it is no exaggeration to say that this screen is one of the greatest Oriental works of art which ever came to the Museum. Dr. Gunsaulus' ingenuity and perspicacity in the discovery of this treasure cannot be praised enough, and he is deserving of our heart-felt gratitude for his generous presentation, as well as for the thoughtfulness and spirit in which it is made.

In the Department of Anthropology there were received as a gift from Mr. H. W. Narjal five pieces of tapa cloth and three war clubs from Samoa, a pair of Eskimo skin boots, and an ancient suit of chain mail coming from Sweden, but probably manufactured in Persia. A very interesting lot of Chinese pottery fragments was presented by Mr. E. B. Christie who at a time was connected with the Philippine Museum of the Bureau of Science, Manila, and discovered these bits in 1915 in ancient burial caves of Bohol, Philippine Islands. Some of these shards have artistic and archaeological value, being as early as the time of the Sung dynasty (tenth and eleventh centuries). There are several good examples of celadons which show that the sea-green glaze of this ware was wrought over a porcelain body at that period, and a large series of other glazes, particularly blue and whites. It is hoped that this material will give occasion to a renewed and more profound study of the problem of Chinese pottery in the Philippines, which was taken up in a pub-

lication of the Museum some years ago. A valuable museum purchase is represented by the grave material secured from a cave on the Pecos River, Val Verde Co., West Texas, by Mr. J. H. Hudson. The principal object was dug up four feet underground, being the skeleton of an Indian child in excellent state of preservation, wrapped in an antelope skin and adorned with a necklace of shell beads of intrinsic value. In the same cave were found a finely woven mat with very interesting painted designs, two plain undecorated mats, several deer or antelope skins, two smaller mats, a rabbit fur robe, and a bone awl. Besides there is the skull of an Indian woman and some detached bones discovered in another cave. Prominent among the year's accessions is a rare robe, the gift of Mr. Homer E. Sargent, which is a welcome addition to the choice collection of blankets given by him last year. It is a blanket made at Spuzzum, B. C., about 1863; it soon passed into the possession of a Hudson Bay Company's factor, in whose family it remained for more than fifty years until it was purchased for Mr. Sargent. While this type of blanket was formerly produced by Lower Thompson and some of the neighboring Lower Frazer Indians of Yale, not more than six are known to be now in existence. Through Mr. Edward E. Ayer, the Museum purchased several articles from the rapidly vanishing Tolowa tribe in the extreme northwestern part of California; among these being two fine buckskin festival dresses, also a beautiful head-band worn in the Jumping or Fall dance. A metate with muller from Mexico was turned over to the Department as a gift from Mr. Ayer. The most important addition of this year is represented by the material received in exchange from Mr. George G. Heye, director of the Museum of the American Indian, New York, and making a total of seven hundred objects. The collection covers two regions: Ecuador and the West Indies. The majority of the material comes from the West Indies (412 specimens): Trinidad, Carriacou, St. Kitts, St. Vincent, Santa Lucia, Grenada, the Virgin Islands, and Cuba. It contains a large quantity of stone axes of different shapes and of shell celts which are available for exhibition. The balance of the West Indian material consists of pottery fragments and sherds, entire vessels being excessively rare from this region. A large number of the fragments contain relief figures suitable for exhibition, but, on the whole, the collection has greater scientific value because of its rarity. The Ecuador collection is excellent, consisting of 288 specimens, principally entire pottery vessels of high exhibition quality and of types not heretofore possessed by the museum. There are also a few stone and a very few metal pieces from this region. On the whole it is an excellent collection of almost perfect exhibition value. Two sacred bundles from the Sauk and Fox were

purchased through Dr. T. Michelson of the Bureau of American Ethnology; they form a valuable addition to the sacred bundles from other Indian tribes in the collections.

The Department of Botany received the following important additions to its herbarium during the year: The highly valuable "Centurie Species Blancoanæ," distributed specially by the Philippine Bureau of Sciences, to illustrate, by topotypic plants, the species treated by Blanco in his Flora of the Philippines, and in addition to these 374 further Philippine species; "Plantæ Wilsonianæ," 753 plants of China and Japan; 457 Philippine plants from a series specially collected for the Arnold Arboretum; the herbarium of Professor Hall, formerly State Geologist of New York, 1,311 plants representing the Flora of Troy, N. Y.; Earl E. Sherff, 446 plants of Illinois; Dr. Robert Ridgway, 267 plants of Illinois; C. F. Millspaugh, 117 plants of Wisconsin, and 182 North Carolina; F. C. Gates, 390 plants of Michigan; Florence Beckwith, 85 plants of Illinois; Walter Fischer, 299 plants of Argentina; New York Botanical Garden, 363 plants of Jamaica (Harris); A. A. Heller, 306 plants of California and Oregon; and Ira W. Clokey, 170 plants of Colorado. On account of lack of preparatorial assistance for poisoning and mounting specimens the additions to the herbarium fall far below the usual annual quota. The regional distribution of fully organized material added to the herbarium in 1918, is shown in the following tabulation:

LOCALITY	Added this Year	Total in Herbarium
NORTH AMERICA:		
Assiniboia	1	21
Manitoba	3	262
Ontario	3	1,670
United States:		
Alabama	8	1,468
Arizona	9	8,221
California	288	25,583
Magdalena Islands	17	33
Colorado	11	12,585
Connecticut	38	692
Carolina, North	211	4,754
Delaware	1	1,338
District of Columbia	44	2,712
Florida	5	20,331
Georgia	11	3,995
Idaho	4	3,655
Illinois	833	27,968
Indiana	102	6,943
Kansas	6	546
Kentucky	3	1,373

LOCALITY

Added this
YearTotal in
Herbarium

United States: (continued)

Maryland	86	1,366
Massachusetts	7	5,350
Michigan	397	3,912
Missouri	4	3,886
Nevada	1	1,295
New Jersey	30	3,037
New Mexico	36	3,722
New York	911	7,471
Ohio	7	2,070
Oklahoma	1	296
Oregon	48	8,986
Pennsylvania	22	10,158
Rhode Island	2	602
Rocky Mountains	2	59
Tennessee	3	1,370
Texas	10	9,888
Utah	3	3,301
Vermont	6	3,604
Virginia	107	4,843
Washington	11	7,511
West Virginia	14	2,042
Wisconsin	122	5,007

Bahama Islands:

Inagua	1	444
Long Cay	1	12
New Providence	3	2,428

West Indies:

Barbados	3	346
Cuba	44	10,957
Dominica	7	98
Grand Cayman	2	146
Jamaica	365	7,694
Porto Rico	1	4,731
Santo Domingo	1	1,323

CENTRAL AMERICA:

Costa Rica	4	612
Guatemala	2	3,083
Mexico	70	31,314
Lower California	1	1,685
Yucatan	6	6,759
Cozumel Island	2	200

SOUTH AMERICA:

Columbia	1	2,431
Argentina	299	1,368
Uruguay	2	168
Venezuela	1	707

EUROPE:

England	1	2,459
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LOCALITY	Added this Year	Total in Herbarium
AFRICA:		
Congo (French)	1	2
ASIA:		
Amboinia	124	124
China	679	2,260
Japan	74	339
Philippines	715	11,653
Horticultural	127	3,181
Illustrations, mounted as Herbarium specimens . .	45	2,236

The Department of Geology received its most important accession during the year from Mr. William J. Chalmers, who provided ninety additional specimens for the collection of mineral crystals. These specimens are of high quality and interest and greatly enhance the value of this already unique and remarkable collection. A valuable series of minerals and gems, some of them cut, associated with the diamonds of the Jagersfontein, South Africa, mines, was presented by Mr. Alexander Fay Brigham. The Great Northern Railway presented a large painting of the Rome glacier of Glacier National Park, Montana. Several valuable accessions were received by exchange, among which a series of Permian reptiles from the University of Chicago was of first importance. The series contains skulls, vertebræ and other bones of the rare, primitive forms, Eryops, Labidosaurus, Pariotichus and Dimetrodon. The great scarcity of remains known from the Permian and the primitive characters of these forms, make the addition of these specimens to the collections a valued accession. From the Australian School of Mines, Sydney, Australia, a number of rare Australian minerals were secured by exchange. These specimens included chiefly opal, chromite and different forms of tetrahedrite. By exchange with Joseph N. Prokes, fourteen large specimens of an interesting form of calcareous tufa produced by spring deposition were obtained. By purchase, the type specimen of *Paolia superba*, an insect of the Carboniferous period allied to the modern locust was obtained. The specimen shows chiefly the wings of the insect, which are about three inches in length and are preserved with complete venation in a fossil concretion. Several large specimens of minerals were also secured by purchase, of special importance among them being some unusually brilliant and well-formed pyrite crystals.

In the Department of Zoology the accessions of mammals and birds during the year have been few, 12 mammals and 66 birds having been donated, while only 18 mammals and 4 birds were purchased. Five British fishes, representing new groups for synoptic series, were purchased from the well known fish taxidermist Mr. Sherman F. Denton. Mr. L. L. Pray presented to the Museum several small Michigan fishes

and two large fishes, a sheephead and a muskallunge, mounted by himself. Some additional fishes and reptiles from California, including paratypes of two new species, were presented by Assistant Curator Hubbs, who also collected some local cold-blooded vertebrates. By exchange the study collection of fishes was enriched in several directions, the following list of material having been secured: 375 fishes, amphibians and reptiles from British Honduras, comprising the collections of the late Dr. B. G. Bailey, Coe College, Cedar Rapids, Iowa; 38 fluviatile fishes from Eastern Mexico, from the Museum of Zoölogy of the University of Michigan; 33 fishes, mostly of the family Atherinidæ, including the paratype of *Ischnomembras gabunensis*, from the Academy of Natural Sciences of Philadelphia, and four desirable fishes and salamanders of Southern California, from the San Diego Society of Natural History. The acquisitions in the Division of Entomology during the year consisted mainly of small gifts from various donors. The large number of insects accessioned is wholly due to the fact that it includes the collection received from Dr. William Barnes several years ago. A brief description of Dr. Barnes' donation was given in a former report. The insects received by donation number 3,148 and by exchange 4.

INSTALLATION, REARRANGEMENT, AND PERMANENT IMPROVEMENT, PACKING FOR REMOVAL TO NEW BUILDING.—In the Department of Anthropology installation was carried on only during the first five months of the year, fifteen cases being installed during this period. Thirteen of these belong to the section of Mexican and South American archæology, and comprise two cases devoted to Central American archæology, two to Mexican archæology, four to Mexican ethnology, and five to South American ethnology. Labels have been printed for all of these and installed in all but four cases. As five cases of Mexican archæology and ethnology were installed in 1917, a total of eighteen, out of the number of seventy-eight cases planned for Hall F in the new building, have been completed to date. One four-foot case housing New Guinea material was installed. In it are exhibited some fine examples of the carved wooden drums known as *garamuts* and found on the north coast of the island. These illustrate the principal variations which occur in this region. A case containing more than eighty-five bronze vessels collected in Egypt largely through Mr. Edward E. Ayer's efforts, and comprising ladles, basins, ewers, bowls, cauldrons, jugs, amphoræ, vases, plates, libation pourers, pails and strainers, has been carefully installed in conformity with the plan previously formulated. In accordance with instructions issued on May 20 installation was discontinued, and preparations were at once initiated to mobilize collections for their future reception in the new building. Methods of packing and

material required for this purpose were discussed at meetings with the staff, and the suggestions brought out during these discussions proved most helpful. This Department has adopted the principle of packing, wherever feasible, in the cases and disturbing the material as little as possible. Following is a summary of the material packed during 1918 in the Department of Anthropology: 150 exhibition cases, 209 crates, 131 boxes, 1 burlap, and 1,194 carton-boxes. For the packing of pottery and bronze the exhibition-case is regarded as the safest receptacle: the method followed is to use two boards of the dimensions of a shelf and to place one along the front and the other along the back of a case against the glass and above the floor, whereby a box-like container is insured. The objects are then removed from the shelves, wrapped with corrugated paper, and tightly placed on the bottom of the case; the boards prevent them from coming in contact with the glass. Delicate pottery pieces or fragile clay figures are first packed in carton-boxes stuffed with paper shavings. Halls 50, 51 and 56 of the East Annex were closed during the summer, and the material displayed in the exhibition cases and a great amount of storage material were made ready for transportation. In June orders were somewhat modified, and instruction was given to spare exhibition-cases and to proceed with the packing of storage-material. Efforts then turned toward clearing up the West Annex which for a number of years has been the repository of several ten thousands of objects not yet prepared for exhibition. These were brought to light, assembled, sorted, and classified to be finally boxed or crated. This material embraces collections from the Philippines, Java, India, Turkey, Egypt, New Guinea, Mexico, and South America. Throughout this work has been done intelligently: exchange and study collections are grouped and packed separately, while all exhibition material is selected and so cut out and arranged that it is in readiness for installation in the new building without delay. Exact records were kept of all cases packed and all crates, boxes, and other packages made. As far as possible, labeling was also continued, the labels being placed with the material to which they belong. In the autumn the embargo on closing exhibition-halls was raised, and accordingly Hall 17, sheltering the Hopi altars and the Hopi home-scene, was broken up. Fifteen large cases were dismantled and their contents packed in nine crates, nine boxes, and four standard cases, while seven altar cases were packed *in situ*. The Eskimo Hall is now undergoing the same operation, but simultaneously it is planned to raise this interesting collection to a higher standard of exhibition. First installed some twenty years ago, it has long since outgrown its present system of arrangement. Collections have been secured from new

localities, while notable additions have been made to districts already represented. It is now possible to present an adequate picture of Eskimo life and to illustrate minor variations in the culture of the tribes, due to contact with other peoples, environment, and similar factors. Of the Zavaleta collection, five cases have been arranged for future exhibition. Labels have been written for three of these and are now being printed. One case has been completely catalogued and packed for shipment. The archaeological collection from La Plata Island was examined, arranged for installation in one case, labels written, and the material packed. The balance of this collection, as far as it has not been sent to the Museum of the American Indian for exchange, is likewise packed and labeled as study material. Two cases of the Mexican section have been packed for transportation, and the study material from the South American collections is packed in forty-three boxes. During the past year the entire collection of skeletal material has been thoroughly overhauled, sorted, cleaned, arranged geographically, and numbered by the assistant curator of physical anthropology. The cataloguing of it is now complete, so that data relating to any part of the collection are readily available. In addition to the descriptive catalogue cards, a considerable amount of laboratory work was done on the Peruvian material. Carton-boxes of two sizes have been provided, and the entire collection, including the portion displayed in the exhibition-cases on the east gallery, has been carefully packed in cartons which are numbered and labeled. A list of this material has been prepared in duplicate for future reference in the moving operations. The collections of facial masks and plaster busts of racial types are included in this lot. As this material has been accumulating through twenty years, and an account of its scientific value has not yet been offered, a short summary may be of interest. The total number of crania and skeletons is approximately three thousand six hundred, while casts number about two hundred. There are four hundred and fifty specimens from South America, chiefly from Peru, Bolivia, and Argentine. Among these are many interesting examples which show deformation and trepanning. A large collection of busts has been obtained from Mexico; also a very interesting series of crania excavated in the vicinity of an old temple site at Tezon-tepec. All these skulls are broken in the occipital region, and it is supposed that they were once displayed on a pole in sacrificial ceremonies. Artificial deformation is found in nearly all these specimens. Prehistoric American burials are well represented by collections from the neighborhood of Trenton, New Jersey; the Hopewell, Oregonia, and the Warren County mounds of Ohio; as well as from various sites in Illinois, Wisconsin, and Indiana. Cliff Dweller crania and skeletons

amount to two hundred, while prehistoric Hopi is adequately illustrated by more than three hundred objects. Representative collections have been obtained from the Huron, Blackfoot, Iroquois, Pawnee, and Sioux, while collections in smaller numbers come from Central and Southern groups. The most complete collections from North America relate to the Northwest Coast, those from the Haida numbering one hundred and twenty, Kwakiutl one hundred, Nootka forty-five, Chinook sixty. Other groups are also represented. The California material, while small in number, contains many interesting specimens, two of which gathered by Dr. Hudson are of an exceedingly primitive type. Oceanica (South Seas) is particularly well illustrated by six hundred and forty skulls, many of which exhibit instructive examples of carving and face moulding; while small types of skull deformation, trepanning, etc., are found; the collection also contains mortuary figures provided with human heads and other parts of the skeleton. Malaysia and China yield one hundred and twenty-five objects gathered in connection with the Museum's ethnological expeditions. Owing to the scarcity of skeletal material from these regions in our museums the specimens are of especial interest. The bulk of the material relative to Negroes and Whites consists of complete skeletons, secured in the Middle West and macerated at the Museum. Some one hundred and seventy-five individuals are represented in this section. Many minor collections covering Egypt, ancient Sardinia, and parts of Africa and Europe, are also included in the lists. Since the organization of the section of Physical Anthropology, considerable attention has been paid to measurements on the living, and charts representing more than four thousand individuals are now on file. Of this number the greater part refers to the pagan tribes of the Philippines. Various rearrangements were made in the course of the year. In the Egyptian Hall three hanging wall cases were emptied of their contents consisting of mummies of hawks, cats, alligators, and other small animals; Ushebti figures, basketry and writing materials, for future re-installation in standard cases. Two cases of small working groups and wooden burial figures were also vacated, studied with reference to labels, and packed for transportation in a standard case. One case of vases and mortuary jars, one of boxes and biers, and another of canopics or viscera jars, were dismantled, the contents studied and packed in a standard case. In the East Court, three cases of Mexican, Venezuela and British Guiana ethnology were stripped for immediate installation, following the elimination of study and duplicate material. One Peabody case containing archaeological collections from Nicaragua, Bahama and Santo Domingo was released for storage, the material being properly divided for re-installation. The

Shastan collection was removed from a standard case to storage and will be re-installed at a later date. This change was made necessary by the arrival of new material. Six Peabody cases formerly used for storage purposes in Halls 68, 69 and 72, emptied of their contents in the process of packing, were removed and stored in the basement to give floor space for the cartons containing skeletal material in Hall 69 and the crated Melanesian material in Hall 72. In the repair section of the Department four hundred and forty-nine objects were restored, and more than two hundred and fifty received treatment. There were 50,591 new numbers marked on specimens, chiefly those relating to physical anthropology and archæological collections from Columbia, Peru and Argentine.

In lieu of installation in the Department of Botany this year, all effort of the staff, with the exception of herbarium installations and the work of plant reproduction, was expended in preparation for moving the collections to the new building. All those exhibition-cases designed to be moved without disinstallation, and intended to be kept on exhibition until moved, have been opened, their contents and labels securely anchored in place, and the storage locker contents packed in containers therein. In the east and west court galleries two hollow rectangular spaces were enclosed by these cases and within them 60 cases, secluded from public view, were completely disinstalled and their contents packed for shipment in the lockers beneath. In this manner more than half of the Department cases are now ready for shipment without seriously impairing the public attractiveness of the botanical display as long as the present building may be open. The activities of the Mrs. Stanley Field Plant Reproduction section have resulted in the production of the following life-like studies that have either been installed in the families to which they pertain or cased on view temporarily, awaiting true installation: A complete Pitcher-leaf plant (*Nepenthes*) in full leaf, flower and "pitcher," enlarged male and female flowers, and a "pitcher" in section showing its contents of partly digested insects; a large Trumpet Creeper vine (*Bignonia*) in full leaf, flower and fruit, a Catalpa flower in section, revealing its essential organs, a long rachis of Saussage fruits (*Kigelia*) with leaf above and two clusters of Candle-tree fruits (*Parmentiera*) suspended from the trunk of the tree; a complete plant of Poison Ivy (*Toxicodendron*) in full vernal leaf and flower, another in autumnal maturity with colorate leaves and ripe fruit, a section of a floral cluster enlarged to reveal the tree distinctive floral characters of the family, a leafy twig of the Mango (*Mangifera*) in ripe fruit and another of *Kemanga* in like condition; a large branch of *Gonocaryum* in full leaf, flower and fruit, produced from material and studies secured,

by the Curator, in the Botanical Gardens of Buitenzorg, Java, also an enlargement of the peculiar fleshy flower of the species; a complete, leafy, fruiting branch of the Sassafras, with an enlarged flower of the Alligator-pear (*Persea*) also a twig of the latter in leaf and ripe fruit and a fruit in section; summit of a Bitter-sweet vine (*Celastrus*) in full leaf and ripe fruit, a small twig in full flower, and a single flower enlarged; a large branch of Witch Hazel (*Hamamelis*) in full autumn leaf, flower and fruit and a single flower enlarged; a series of enlarged flowers of *Grevillea* showing the peculiar character of anthesis in the Proteaceæ; cluster of three plants of *Galax*, growing *in situ*, in full leaf and flower and a portion of a floral cluster, enlarged, showing buds and two flowers in different stages of anthesis; a Passion-flower vine (*Passiflora*) in full leaf, flower and fruit; a complete plant of the Fox-glove (*Digitalis*) in full leaf and flower; a large flower of the Corn Poppy (*Papaver*) sectioned to reveal its essential organs; a complete Arrow-head plant (*Sagittaria*), *in situ*, in full leaf and flower; a frond of the Tuna cactus (*Opuntia*) in full ripe fruit illustrating one of the cultivated varieties now becoming prominent in the fancy fruit shops of our cities; a leafy, flowering and fruiting branch of the Indian Mulberry (*Morinda*), another peculiar fruit now and then reaching our northern markets; an enlarged flower of the Bladder-wort (*Utricularia*) sectioned to reveal its peculiar structure, an enlarged leaf of the plant with its interesting bodies commonly known as "floats," a single float, or bladder, highly enlarged and opened to reveal its contents (partly digested larvae and minute water animals) proving these "bladders" to be, in reality, stomachs, and the plant to be carnivorous; the smaller Algæ, the Flagellatæ, Dinoflagellatæ and Peridinæ, groups of micro-plants, have been completed through the production of single individuals or several forms in the following genera: *Spirogyra*, *Spirulina*, *Nostoc*, *Rivularia*, *Trichodesmium*, *Lingyba*, *Oscillatoria*, *Clathrocystis*, *Coccolithophora*, *Discosphaera*, *Syncrypta*, *Euglena*, *Conocladium*, *Rhabdosphaeria*, *Ornithoceras*, *Ceratium*, *Peridenium*, *Gymnodenium*, *Spirodenium* and *Cochlo-denium*. In October it was decided to transfer the laboratories and staff to Miami, Florida, where, through the courtesy of the Bureau of Plant Introduction of the United States Department of Agriculture, quarters were granted this Museum in the Department Laboratory Building at that place. All necessary appliances and apparatus were shipped forward and the staff left in a specially equipped automobile on the 19th of that month. On the way south studies and casts of the cotton plant were secured. Arriving at Miami, without special incident, immediate preparations were begun for the re-establishment of the work which is now progressing as before removal. The opportunity to thus secure needed

semi-tropical representative plants is an excellent one. The Section of Plant Reproduction will remain in Florida until April or early May.

In the Department of Geology about one hundred and twenty-five specimens were added to the Chalmers Crystal collection and the whole series re-installed, the additions making it necessary to move part of the collection to another case. The specimens are all mounted in correct crystallographic positions on individual mahogany stands and have separate individual labels. In the arrangement of the collection as exhibited, specimens illustrating the six crystallographic groups are first shown in order and subsequent to these, specimens of twin crystals, crystal groupings, crystal inclusions, crystal distortions, etc. The work begun last year of repolishing and re-etching the sections of iron meteorites, has been continued, thirty-six specimens having been thus treated during the year. These specimens have been re-installed as fast as the work upon them has been completed. Several relief maps that had been exhibited in the Court were removed and packed, while others were re-installed. The large painting of a Montana glacier presented by the Great Northern Railway was installed in this court in connection with large specimens showing glaciated surfaces. A model of the Natural Bridge of Virginia, based on the accurate survey and studies in the field made by the Assistant Curator last year, has been executed by the Assistant Curator and also placed on exhibition in the West Court. The model is five feet six inches long, three feet three inches wide, and two feet ten inches high, thus being of a size which is as large as will fit into the ordinary type of case. The scale is ten feet to the inch. This scale, without producing a model of unwieldy size, is large enough to show minor details distinctly. In this model an attempt has been made to simulate nature as closely as possible and to avoid the conventionalized and generalized systems of representation frequently employed in geological modeling. Also the vertical and horizontal scales are the same, thus avoiding the distortion which is also frequently employed in geological models. The model represents a length of 660 feet of the gorge of Cedar Creek in Rockbridge County, Virginia, with the well-known Natural Bridge of limestone spanning it at an elevation of 215 feet above the water. The stream bed and the vertical cliffs are of limestone, with coatings of bright-colored clays. The higher levels and the more sloping portions of the cañon walls are densely wooded. The basis of the model is reinforced concrete. The limestone surfaces and cliffs are modeled, the concrete mixtures at the surface being varied to meet the changing requirements of the rock texture. The strongly colored surfaces of the limestone have been reproduced in the model by permanent pigments which have been introduced into the pores of the con-

crete, thus avoiding a painted effect. Some carved pebbles were employed to represent individual rock features. The wooded portions of the model contain over 1000 miniature trees. The most prominent geological feature illustrated by this model is the formation of a natural bridge by the collapse of the roof of a cave, leaving only a fragment in the form of a bridge. The cañon of Cedar Creek marks the position of the former cave and traces of the latest falling of the roof appear as large limestone boulders in the creek immediately above and below the bridge. The geological reason for the location of the bridge in its present position is indicated by the appearance of the rock on the west wall of the gorge, which shows distinctly at the bridge the axis of a syncline where the beds of limestone lie level and also tend to be less broken than elsewhere. Other characteristic cave features illustrated by the model are light-colored stagmalitic deposits on the wall under the bridge and two vertical pits, one above and one below the bridge. The skeleton of the Irish Deer in Hall 36, having been found to be undergoing injury on account of imperfect mounting, was in part disarticulated and the supporting framework reconstructed. The upright rods were lengthened, reinforced and attached to the base in such a manner as to give a rigid support. Some fractures in the skeleton were repaired and a few missing parts restored. In remounting, also, the posture of the body was improved. Considerable progress has been made also towards mounting a skeleton of *Megacerops*. This is an Oligocene titanotheres collected in South Dakota by the Museum expedition of 1898. While the greater part of the skeleton was obtained, restoration of some components was found necessary. Most of these it was possible to model from corresponding parts of the same individual, but in some cases comparative studies of related animals were used as a basis for modeling. It is intended to display the skeleton in three-quarters relief on a combined base and background, these reproducing so far as possible the matrix from which the specimen was taken.

In addition to the attention given to preparation and installation of new material, a large amount of time has been occupied in packing in preparation for removal to the new building. For the most part the collections packed have not been of exhibited material, it being deemed desirable to allow this to remain exhibited as long as possible. The study and stored collections have therefore been those which have been chiefly boxed. This work has so far progressed as now to include the vertebrate paleontological collections which have been stored in the basement of the taxidermy building, and the entire study collections of vertebrate and invertebrate fossils, ores and other economic specimens, lithological

specimens and some apparatus. Careful records of the contents of each box have been made and each box has been marked in such a way as to secure its identification for unpacking and delivery at its appropriate destination in the new building. The record of the material packed during the year is as follows: Invertebrate fossils, 87 boxes; large field specimens of vertebrate fossils, 58 boxes; smaller vertebrate fossils, 48 boxes; lithology specimens, 27 boxes; ores, 67 boxes; apparatus and miscellaneous, 22 boxes and 22 barrels; relief maps, 10 boxes, making a total of 331 barrels and boxes.

In the Department of Zoology the work of the year has been largely directed to matters looking toward removal to new quarters. This has involved some rearrangement of specimens, some elimination of undesirable material, considerable planning and estimating and actual packing. The usual care in preventing damage to specimens from insects has been exercised. The skin dresser has been occupied chiefly in preparing skins of large mammals which have been in the possession of the Museum for a number of years but which, owing to pressure of other work, have remained in the raw state. These were found in good condition. Recently obtained skins, principally from South America, also were dressed for permanent preservation or for mounting. Plans for moving specimens of mammals and birds have been made by which the majority of such specimens will be packed in the storage cases where they are now kept and thus they may remain accessible until shortly before the actual time of moving. Considerable progress has been made in packing other material. In Taxidermy, a large number of casts and material for preparing bird and mammal groups has been boxed or crated and similar material not required for immediate use, including field equipment, etc., has also been packed. The collection of leg bones of large mammals reserved for mounting has been reassorted, relabeled, and packed after the elimination of duplicate or unnecessary specimens. Revision of the synoptic exhibit of mammals has continued and a number of specimens have been provided with new bases, while a few others have been set aside for remounting. A large mounted elephant seal was discarded. A group of the common Ruffed Grouse or "partridge" of the Northeastern United States was installed, completing a four-section case of local bird groups. It shows a pair of old birds and their nest under a log, the old female just leaving her eggs in fright at a raccoon which is approaching. A painted background shows a scene from the Forest of Arden near Joliet, Illinois, and the foreground shows an attractive reproduction of characteristic shrubs and smaller plants. The following four groups are now included in this, the latest of the four-section bird cases: Winter Bird of Lake Michigan; Bird Life of

Fox Lake; Winter Bird Life of Northern Illinois, and Ruffed Grouse in its Summer Home. The several animals for the group of American Bison provided through the generosity of Mr. Arthur B. Jones and mentioned in a former report, were mounted during the year; but owing to the large size of the group and the difficulty of obtaining a proper case for it, the final installation was postponed until after removal to the new building. Therefore the animals, mounted on movable bases, have been temporarily placed on exhibition without background or accessories in a large case in the Rotunda of the Museum. Additions to the synoptic exhibition of mammals have been few, the most important being a large male specimen of the extraordinary baboon known as the Mandrill. Work has progressed on accessory material for projected groups of large mammals, especially that of the Olympic Elk, for which the painted background and the specimens of the animals have been in hand for some time. The exhibition work of the Division of Ichthyology and Herpetology was almost wholly of a preparatory character, it being considered unwise to install new material prior to the time of moving. Three snakes (two rattle-snakes and one fox snake), mounted on sanded bases, were the only specimens placed on exhibition during the year. A few fishes already on exhibition were remounted for more effective display. All of the sixty food and game fishes of the Mississippi River, obtained by a Museum Expedition in 1917, were mounted. After considerable planning and experimenting, a type of habitat group for small fishes was developed which promises gratifying results. A sample group which has been prepared shows an excellent sub-aquatic effect, an improvement on groups previously prepared. This group is installed in one of the rectangular glass jars originally designed for the display of fishes in fluid, a practice which has proved by experience in both this Museum and elsewhere to be unsuccessful. By using the type of habitat group mentioned above, seventy-two of the more important of the smaller local fishes can attractively be displayed in their proper environmental setting, in the two twelve-foot cases now utilized for the unsatisfactory exhibition of fishes in fluid. In addition to the actual work outlined above, the whole fish exhibit plans for the new Museum have received further consideration. The number of cases to be used, and to a large degree the detailed contents of each case, have been decided upon. The replacing of the old bottles of varied sorts now used in the collection of the Division with a more uniform and more economical type of specimen jar has been continued. The supply of such jars purchased in 1917 having been largely absorbed in the collection, a new order for 97 dozen jars of appropriate sizes was placed and filled. The most noteworthy work to which the Division of Entomology was de-

voted during the first five months of the year was the completing of an exhibit of scorpions and centipedes and the making of a sample habitat group of insects. Some time also was spent on a group that will represent the well-known and injurious tomato worm in its usual surroundings. The scorpion and centipede exhibit consists of a series of special tablet mounts, of which 29 contain different species of scorpions; 2 show harmless but much feared whip-tailed scorpions, 3 the agile solpugids, the nature of which has been the subject of much controversy, 11 illustrate some of the giant spiders including the tarantulas and trap-door spiders, and 14 tablets contain examples of the larger and hence more poisonous centipedes. This series of specimens with their labels occupies seven of the twelve panels in one of the new A-cases. As an experiment as to what might be done in the way of making groups of insects with accessories to represent natural surroundings, there was prepared a sample case containing the most conspicuous and characteristic insects found in the sand dune region. The group was regarded as a step in the right direction and a case was ordered capable of accommodating two groups and a space for illustrated labels. In addition to the above mentioned groups, the silkworm exhibit was also completed by supplementing photographs illustrating the industry in Japan and by the installation of suitable descriptive labels. The Barnes-Poling collection of moths was taken from the unsafe boxes in which it was received several years ago and transferred to insect-proof drawers. As a result of this work these insects are now arranged systematically in safe, glass-topped drawers and the storage or shipping boxes have been returned to the donors of the collection. Considerable preliminary work was essential before the insects in the laboratory could be actually packed for moving. This was especially true of the large number of specimens that were simply lying loose in shallow trays. As they could not be safely moved in this condition, they were relaxed and then placed between layers of cotton in small boxes. Every specimen in the Strecker collection were next examined in order to ascertain whether its pin was held securely, and, as a precautionary measure, all of the large butterflies and moths were secured by pins so as to prevent them from turning. The other pinned material was treated in a similar manner, but for the insects packed in papers and in small boxes different protective measures were adopted. A limited number of the loose specimens were pinned and labeled, because they could be more safely shipped in that condition. In order that the cases containing insects could be put in proper place in the new building, it was quite evident that they should be numbered before any attempt was made to pack the exhibits. This work was promptly given attention and all of the cases are now numbered so as to correspond with the

numbered space assigned to them on the floor plans of the exhibition-halls. Little was done toward completing the re-installation of the shell exhibit. Fifteen skeletons that were stored in Taxidermy were turned over to the Division of Osteology. These were prepared, catalogued and index cards written for the same. Eighty-seven skulls were cleaned for the Division of Mammalogy. Three skeletons were cleaned for the collection of Comparative Osteology. Since the middle of May the entire time of the Assistant Curator has been devoted to packing skulls and skeletons for moving. During that time fifty-three boxes and crates of large skulls and skeletons were packed. Six drawers of the storage cabinet were packed with small ligamentary skeletons.

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION OF FIELD MUSEUM OF NATURAL HISTORY.

— At the close of the year there were 588 cases available for circulation among the public schools of Chicago. It is very gratifying to be able to report that despite a reduction in the number of the staff, owing to the enlistment of two of its members in the United States Army and the resignation of another, fifty-four cases were installed during the year. It was necessary to alter hanging and increase storage facilities for cases in order to accommodate 250 new cases. It may be said, and with some pride, that the type of case originally adopted by this Department continues to meet the many demands made upon it. The schedule prepared at the beginning of the year for the delivery of cases to public schools during the scholastic year was maintained, except for a period of several days during the early part of January, when deep snow prevented delivery of cases to schools. In connection with civic activities held on the Municipal Pier during the summer, a loan of cases from this Department was requested. During the first part of July twelve cases were sent to the pier in compliance with this request. After these cases had been on exhibition but a few days, the Superintendent of the pier, in a communication, expressed his and the public's appreciation of "the very interesting and highly educational exhibits" and adding "these exhibits are studied with great interest by young and old, and many enthusiastic statements are made concerning them. They are a real attraction to the pier and I am writing you for the purpose of asking you to supplement the present exhibit." In compliance with this later request, twelve cases were sent. The twenty-four cases were on exhibition in a large, well-lighted hall, in which were also exhibited paintings and sculptures. A request was granted to the Twenty-sixth Ward Woman's Civic League for several cases to be exhibited in the field house in Welles Park for the purpose of illustrating a lecture on the extension work of the Museum. The Curator of the Children's Museum of Brooklyn stated in a communication received early in the

year, that their Museum was raising by popular subscription a sum of money to be expended in extending the Museum in the public schools of that city, and requested the loan of a typical case of this Department together with the motion picture film showing methods of storing, delivering cases, etc., which was shown at the Panama-Pacific International Exposition as a part of this Department's exhibit there. In making this request the Curator stated: "The N. W. Harris Public School Extension has set a glorious example for the whole land and an example which I hope we will be able to follow with success. It would help us out immensely and be of great assistance in educating the people up to the meaning of loan collections, and it would have much to do with the success of our campaign." A case and the motion picture film were sent as requested. After using them for several weeks for the purpose desired, an extension of the time of the loan of the case was asked. In support of this request it was stated, "The case and motion picture film were being used quite effectively, and that people here seem to be delighted with the conception of such a loan, and the comments are uniformly enthusiastic." Requests for information concerning construction of cases, methods of installing, distributing and loaning them have been received from various institutions.

PHOTOGRAPHY AND ILLUSTRATION.—The following is a tabulation of the work performed in this Section during the year:

	Number of Negatives made	Number of Prints made	Number of Lantern Slides made	Number of Negatives Developed for Expe- dition	Number of 6½x8½ Positives made. Used in making large Negatives
General	12	213	..	..	..
Anthropology	63	503	..	..	..
Botany	41	98	..	..	4
Geology	11	49	..	..	..
Zoology	10	29	..	..	..
Harris Extension	24	25	..	10	..
Gift . . . . .	..	70	1	..	..
Sale . . . . .	..	95	32	..	..
Totals	161	1,082	33	10	4
Total number of Catalogue entries during 1918					1,290
Total number of Catalogue entries to December 31, 1918					119,138
Total number of Record Books					20

PRINTING.— The number of labels and other impressions made by the Section of Printing during the year is as follows:

	Exhibition Labels	Other Impressions
Anthropology	2,341	8,210
Botany	2,167	10,140
Geology	2,529	7,000
Zoology	1,902	6,700
General . . . . .	.....	22,400
Library . . . . .	.....	1,900
Harris Extension	551	150

Herewith are also submitted financial statements, list of accessions, names of members, etc.

FREDERICK J. V. SKIFF, *Director*.

FINANCIAL STATEMENT.

RECEIPTS AND DISBURSEMENTS.

January 1, 1918, to December 31, 1918.

RECEIPTS

Cash in Treasurer's hands December 31, 1917:

General Fund	\$2,417.05	
Picture Post Card Fund	275.25	
Endowment Sinking Fund	243.83	\$ 2,936.13
<hr/>		
Petty Cash on hand December 31, 1917		739.95
Dues of Annual Members		810.00
Admissions and Check Rooms		3,721.05
South Park Commissioners		15,000.00
Interest on Investments and Bank Balances		9,505.17
Field Endowment Income		131,500.00
Field Endowment Sinking Fund		4,676.26
Field Endowment Sinking Fund Income		1,477.87
New Building Moving and Furnishing Fund		23,885.00
Picture Post Cards—Sales		595.42
Mrs. Stanley Field Plant Reproduction Fund		8,490.00
Arthur B. Jones Buffalo Group Fund		138.59
Joseph N. Field South Pacific Islands Fund		648.00
Sundry Funds—Investments Interest		5,198.91
Sundry Receipts		357.18
Donations—special		
Homer E. Sargent	\$ 250.00	
Charles R. Crane	500.00	
Edward E. Ayer	50.00	800.00
		<hr/>
		\$210,479.53

DISBURSEMENTS

Salaries		\$74,945.04
Guard Service		11,347.66
Janitor Service		6,528.80
Fire Protection		4,177.96
Heat and Light		22,487.19
Repairs and Alterations:		
Wages—Carpenters, Painters and Roofers	\$8,784.08	
Material used—Lumber, Paint, Oils and Glass	335.62	9,119.70
Packing Supplies		2,000.27
Furniture and Fixtures		512.00
The Library:		
Books and Periodicals	\$554.53	
Binding	320.67	
Sundries	57.90	933.10
Collections Purchased		1,243.82
Installation Supplies		2,229.94
Publications		2,449.55
Picture Post Cards		9.00
Sections of Photography and Printing—Supplies		300.56
General Expense Account:		
Freight, Expressage and Teaming	\$1,288.49	
Stationery, Postage and Telephone	551.33	
Liability Insurance	670.81	
Sundries	1,020.20	3,530.83
Mrs. Stanley Field Plant Reproduction Fund		7,781.80
Stanley Field Ornithology Fund		15.00
William J. Chalmers Crystal Fund		165.30
Arthur B. Jones Buffalo Group Fund		28.59
Life Memberships Fund—Investments		1,800.00
Endowment Sinking Fund—Investments		6,050.00
New Building Moving and Furnishing Fund—Investments		27,995.00
Sundry Funds—Investments		17,560.00
Employers Liberty Loan Bonds		3,035.00
In Treasurer's hands, December 31, 1918:		
General Fund	\$3,103.19	
Picture Post Cards Fund	42.32	
Endowment Sinking Fund	347.96	3,493.47
Petty Cash on hand, December 31, 1918		739.95
		<u>\$210,479.53</u>

ATTENDANCE AND RECEIPTS FROM JANUARY 1, 1918, TO
DECEMBER 31, 1918.

ATTENDANCE		
Paid Attendance:		
Adults	12,530	
Children	1,240	13,770
Free Admission on Pay Days:		
School Children	7,790	
Students	3,154	
Teachers	545	
Members	37	
Officers' Families	44	
Press	2	
Special	643	12,215
Admissions on Free Days:		
Saturdays	28,035	
Sundays	103,021	131,056
*Total Attendance		157,041
Highest Attendance on any one day (August 18, 1918)		5,692
Highest Paid Attendance on any one day (July 4, 1918)		372
Average Daily Admissions (350 days)		448
Average Paid Attendance (259 days)		53
RECEIPTS		
Articles checked—9,291 at 5 cents each	\$ 464.55	
Admissions	3,256.50	
		\$3,721.05

*Museum closed fifteen days during the year.

ACCESSIONS.

DEPARTMENT OF ANTHROPOLOGY.

AYER, EDWARD E., Chicago.

1 Mexican metate with muller — Monterey, California (gift).

CHRISTIE, EMERSON B., Washington, D. C.

Pottery and porcelain fragments from caves — Bohol, Philippine Islands (gift).

FIELD MUSEUM OF NATURAL HISTORY.

Purchases:

1 bone awl, 2 coarse mats, 1 decorated mat, 5 detached bones, 2 dressed antelope hides, 1 rabbit-fur blanket, 1 skeleton of child with shell necklace, 1 skull of woman, 5 wooden implements — Cave in Val Verde County, Texas.

2 Tolowa buckskin dresses, 1 Tolowa feather head-dress, 1 Tolowa stone dish, 1 Yurok feather head-dress — California.

2 sacred bundles of the Sauk and Fox — Tama, Iowa.

JOSEPH N. FIELD SOUTH PACIFIC ISLANDS FUND.

4 trophy skulls — British New Guinea (gift).

GUNSAULUS, FRANK W., Chicago.

Painted screen of the Tosa School, 13th century — Japan (gift).

HAMILTON, THEODORE, Cleveland, Ohio.

Necklace of boar's tusks — Impur, Naga Hills, Assam, India (exchange).

HARVEY, CHARLES A., Chicago.

Archaeological material — Marblehead, Adams County, Illinois (gift).

HOEFELD, NORMAN A., Chicago.

Collection of ethnological objects, chiefly from the Ute — Colorado (gift).

MUSEUM OF THE AMERICAN INDIAN, New York City.

342 pottery fragments, 29 shell implements, 110 stone implements — West Indies (exchange).

91 clay figures, 13 specimens bronze, carved stone and bead necklace, 123 pottery vessels, 41 spindle-whorls, 20 stone implements — Ecuador (exchange).

NARJAL, H. W., Chicago.

1 pair Eskimo skin boots, 1 suit chain mail — Alaska and Sweden (gift).

5 pieces tapa cloth, 3 war clubs, shell and seed ornaments, miscellaneous objects — Samoa, South Sea (gift).

PARSONS, ELSIE CLEWS, New York City.

8 prayer sticks — Zuni, New Mexico (gift).

SARGENT, HOMER E., Pasadena, California.

1 blanket with colored designs of Lower Thompson Indians, B. C. — Spuzzum, British Columbia (gift).

WATSON, J. A., Chicago.

Miscellaneous textiles from northern Mexico, Liberia, and Canary Islands (gift).

DEPARTMENT OF BOTANY.

AMERICAN CUTLERY COMPANY, Chicago.

8 specimens woods used for handles for cutlery — various localities (gift).

AMES BOTANICAL LABORATORY, North Easton, Massachusetts.

8 herbarium specimens — Philippine Islands (exchange).

BUREAU OF SCIENCES, Manila, Philippine Islands.

374 herbarium specimens — various localities (exchange).

Centuria 1,2,3,4,5,6,7,8,9,10, "Species Blancoanae" — Philippine Islands (exchange).

BECKWITH, MISS FLORENCE, Rochester, New York.

89 herbarium specimens — Illinois, Indiana and Kansas (gift).

BRAINERD, EZRA, Middlebury, Vermont.

2 herbarium specimens — Vermont (gift).

BROADWAY, W. E., Tobago, British West Indies.

3 herbarium specimens — Barbadoes (gift).

BUSH, BENJAMIN F., Courtney, Missouri.

4 herbarium specimens — Missouri (gift).

CLOKEY, IRA W., Denver, Colorado.

177 herbarium specimens — Colorado and Wyoming (exchange).

COLTON, MRS. THERON, Chicago.

13 herbarium specimens — Illinois and Indiana (gift).

DEAM, CHARLES C., Bluffton, Indiana.

20 herbarium specimens — Indiana (gift).

EVANS, ALEXANDER W., New Haven, Connecticut.

35 herbarium specimens — Mexico (gift).

FARRINGTON, O. C., Chicago.

2 specimens sphagnum moss — Maine (gift).

FLYNN, MRS. NELLIE F., Burlington, Vermont.

12 herbarium specimens — Vermont (gift).

FIELD MUSEUM OF NATURAL HISTORY.

Collated by C. F. Millspaugh:

7 herbarium specimens — Chicago.

Transfer from Department of Anthropology:

1 specimen lace bark — Jamaica.

Transfer from Department of Geology:

1 fossil cryptozoön — Saratoga, New York.

Transfer from Section of Photography:

7 photographs of types — herbarium.

Purchases:

753 herbarium specimens — China and Japan.

457 herbarium specimens — Philippine Islands.

299 herbarium specimens — Argentina.

306 herbarium specimens — California and Oregon.

Mrs. Stanley Field Plant Reproduction Laboratory:

Reproduction in glass and wax of pitcher-leaf plant, sectioned leaf, enlarged flowers; Sausage-tree fruits; Candle-tree fruits.

Reproductions of Poison Ivy plant in leaf, flower and fruit; poison ivy enlarged flowers; Mango fruits and leaves; Kemang fruit and leaves. 12 reproductions in glass of species of Flagellatae and Peridineae. Models in glass of Nostoc, Rivularia, Trichodesmium, Spirulina, Sporogyna. Reproductions of Gonocaryum pyriforme, branch flower and fruit, and enlarged flowers.

Reproductions of Branch of Sassafras; enlarged flower and fruit of alligator pear and its fruit in section; Micro. plants of Lingbya, Oscillatoria, and Clathrocystis.

Reproductions of plant, flowers and enlarged flowers of Bitter-sweet. Living plants of Calycanthus, Galax; fruits and seeds of Calycanthus; flowers in formalin, of Calycanthus, Galax, Diospyros.

Reproductions in glass and wax of Galax plant and flowers; Grevillea flowers; Witch-hazel branch and flower; Catalpa flower.

Reproductions of Trumpet-creeper vine; Catalpa flower; Indian Mulberry Fruit; Passion-flower vine; Fox-glove plant; Poppy flower; Arrow-head plant; Tuna Cactus fruits; Bladder-wort enlarged leaf and enlarged float.

GATES, FRANK C., Carthage, Illinois.

390 herbarium specimens — Michigan (exchange).

GRAY HERBARIUM, Cambridge, Massachusetts.

1 photograph of Vellozo's plate 25, Xanthium brasilicum (exchange).

JEPSON, WILLIS L., Berkeley, California.

1 herbarium specimen — California (gift).

JOHNSON, ARTHUR E., Chicago.

68 herbarium specimens — Illinois (gift).

LANSING, O. E., Jr., Chicago.

2 fruits and seeds of Staphylea — Jackson Park, Chicago (gift).

LAUFER, BERTHOLD, Chicago.

1 specimen dried opium — Hankow, China (gift).

LEWIS, A. B., Chicago.

1 specimen of fungus — Jackson Park, Chicago (gift).

MATRACIA, A., San José, California.

1 ripe fruiting frond of Tuna cactus — his cultivation (gift).

MILLSPAUGH, CHARLES F., Chicago.

183 herbarium specimens — North Carolina and Illinois (gift).

118 herbarium specimens — Wisconsin and Illinois (gift).

1 photograph of type of Xanthium canadense — London (gift).

1 photograph of type of Xanthium echinatum Mur. in herbarium de Candolle, Geneva — Italy (gift).

1 photograph of co-type of Xanthium oviforme in herbarium British Museum, London — Washington (gift).

MILLSPAUGH, CLARA MITCHELL, Chicago.

11 herbarium specimens — North Carolina (gift).

NEW YORK BOTANICAL GARDEN, New York City.

217 herbarium specimens — various localities (exchange).

44 herbarium specimens — Jamaica (exchange).

148 herbarium specimens — Jamaica and Inagua Island (exchange).

NEW YORK STATE MUSEUM, Albany, New York.

1 photograph of "Cryptozoön Ledge" — Lester Park, Saratoga, New York (gift).

POPE, MRS. FREDERIQUE EUGENIA, Racine, Wisconsin.

- 1 photograph of *Linnaea borealis* in situ — Sturgeon Bay, Wisconsin (gift).
- 1 herbarium specimen — Beach, Illinois (gift).

RIDGWAY, ROBERT, Olney, Illinois.

- 1 photograph of *Tacoma radicans* — Richmond County, Illinois (gift).
- 267 herbarium specimens — Illinois and Indiana (gift).

SEELEY, MR., Asheville, North Carolina.

- 2 specimens wool, dyed with walnut bark and hickory bark — Asheville, North Carolina (gift).

SHERFF, EARL E., Chicago.

- 188 herbarium specimens — various localities (gift).
- 1 herbarium specimen — Nukahiva Island (gift).
- 2 descriptions of species — Library (gift).
- 281 herbarium specimens — various localities (gift).
- 10 herbarium specimens — Illinois (gift).

SHULL, CHARLES A., Lawrence, Kansas.

- 4 type specimens of *Xanthium* — Kansas (gift).

STONE, FRANK B., Chicago.

- 1 specimen fungus — Chicago (gift).

TUNDUZ, ADOLF, San José, Costa Rica.

- 3 herbarium specimens — Costa Rica (gift).

U. S. NATIONAL MUSEUM, Washington, D. C.

Division of Plants:

- 246 herbarium specimens — various localities (exchange).
- 19 photographs of types — Herbarium (exchange).

UNIVERSITY OF CHICAGO, Chicago.

Department of Botany:

- 2 herbarium specimens, type — China (gift).

Department of Geology:

- 1311 specimens, Herbarium of William Hall (gift).

WHERRY, EDGAR T., Washington, D. C.

- 3 herbarium specimens — West Virginia (gift).

WILSON & COMPANY, LABORATORIES, Chicago.

- 15 palm products — Brazil (gift).

DEPARTMENT OF GEOLOGY.

AMERICAN MANGANESE COMPANY, Chicago.

- 1 specimen manganese ore — Laramie, Wyoming (gift).

AUSTRALIAN MINING MUSEUM, Sydney, New South Wales.

- 11 specimens minerals — Australia (exchange).

AXEL, CHARLES O., Chicago.

- 1 specimen gold-silver ore — Platoro, Colorado (gift).

BAILEY, E. S., Chicago.

- 2 specimens radium ore — Wyoming (gift).

BRIGHAM, ALEXANDER FAY, New York City.

- 33 specimens gem and other minerals associated with the diamond — Jagersfontein, South Africa (gift).

CHALMERS, W. J., Chicago.

42 specimens crystals — various localities (gift).

26 specimens crystals — various localities (gift).

21 specimens crystals — various localities (gift).

COOPER, E. R., Rochester, New York.

1 specimen volcanic ash — Yukon Crossing, Alaska (gift).

FARGO, L. W., Chicago.

1 specimen titaniferous iron ore — Cook County, Minnesota (gift).

FIELD MUSEUM OF NATURAL HISTORY.

Collected by B. E. Dahlgren:

83 specimens fossils and ores — Huntsville, Alabama.

Collected by H. W. Nichols:

1 specimen Niagara Limestone — Clarendon Avenue, Chicago.

Purchases:

3 mineral specimens — Utah.

Type specimen of *Paolia superba* — Mazon Creek, Illinois.

FISHER, MRS. H. S., Chicago.

15 specimens minerals and fossils — various localities (gift).

GALLAGHER, J. F., Chicago.

1 specimen chalk, Scotia, Nebraska (gift).

GREAT NORTHERN RAILWAY COMPANY, Chicago.

1 painting of Rome Glacier — Montana (gift).

HAM, FLOYD, Twin Falls, Idaho.

1 specimen soda niter — Malheur County, Oregon (gift).

HARRIS, B. E., Chicago.

1 specimen quartzite breccia — Arkansas (gift).

HUBBS, CARL L., San Diego, California.

9 specimens ores and minerals — California (gift).

KANST, EDWIN A., Chicago.

1 specimen black earth, Chicago, (gift).

NICHOLS, CARRIE R., Waltham, Massachusetts.

7 specimens fossil shells — Canal near West Palm Beach, Florida (gift).

OSGOOD, S. W., Chicago.

2 specimens synthetic graphite — South Chicago (gift).

PATENT VULCANITE ROOFING COMPANY, Chicago.

5 specimens crushed rock for roofing — various localities (gift).

PAYSON, C. H., Watseka, Illinois.

1 specimen volcanic tuff — Pocatello, Idaho (gift).

PROKES, JOSEPH N., Jackson, Minnesota.

14 specimens calcareous tufa — Jackson, Minnesota (exchange).

SCHOLZ, CARL, Chicago.

Photograph of fossil tree — Alderson, Oklahoma (gift).

TUNNELL, G. G., Jr., Evanston, Illinois.

11 specimens minerals and rocks — California, Arizona and New Mexico (gift).

UNIVERSITY OF CHICAGO, Chicago.

Skull of Permian reptile — Brush Creek, Texas (exchange).

24 specimens of Permian reptiles — Texas (exchange).

DEPARTMENT OF ZOÖLOGY.

ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA

33 Atherine and Cyprinoid fishes — various localities (exchange).

ALLEN, MRS. HARRY, Rockford, Illinois.

2 sponges — Florida (gift).

AMERICAN MUSEUM OF NATURAL HISTORY, New York City.

2 bees — New Jersey and Long Island (exchange).

BARNES, WILLIAM, Decatur, Illinois.

2950 moths — Canada, United States and Mexico (gift).

BLATCHLEY, W. S., Indianapolis, Indiana.

1 beetle — Dunedin, Florida (gift).

COALE, HENRY K., Highland Park, Illinois.

2 jays — Amami Oshima, Loo Choo Islands (gift).

COE COLLEGE, Cedar Rapids, Iowa.

375 fishes, amphibians and reptiles — British Honduras (exchange).

COVERT, A. B., Hannibal, Missouri.

1 silver-haired bat — South Haven, Michigan (gift).

FIELD MUSEUM OF NATURAL HISTORY.

Purchases:

2 odd skulls, 11 South American mammals with skulls — French Guiana, South America.

5 glacier bears — skins and skulls — Yakutat, Alaska.

5 mounted fishes — England.

5 small mammals — South America.

3 thick-billed parrots — Paradise, Arizona.

2 waterbugs — Rio Blanco at Orizaba, Mexico.

Transfer from Department of Anthropology:

1 crocodile skull — New Guinea.

STANLEY FIELD ORNITHOLOGY FUND.

1 passenger pigeon (gift).

FRIESSER, JULIUS, Chicago.

2 beetles — Chicago (gift).

GERHARD, WILLIAM J., Chicago.

1 tree frog — Illinois (gift).

GUERET, MRS. E. N., Chicago.

1 bug — Dawson County, Montana (gift).

GUNTHER, F. E., La Crosse, Wisconsin.

1 extra large sheephead — Lake Pepin (gift).

HUBBS, CARL L., Chicago.

7 Atherinoid fishes — southern and lower California (gift).

133 dragonflies, grasshoppers, moths, flies, bees, wasps and parasites — California (gift).

7 reptiles and amphibians — California (gift).

2 snakes — Pacific Beach, California (gift).

11 toads — Indiana (gift).

4 turtles — northern Indiana (gift).

15 water bugs — California (gift).

KEEDY, H. W., Chicago.

2 fresh-water fishes — Florida (gift).

KWIAT, ALEXANDER, Chicago.

1 cicada — Palos Park, Illinois (gift).

LILJEBLAD, E., Chicago.

13 ant-lions, bugs, beetles, and velvet-ants — northern Indiana and northern Illinois (gift).

3 salamanders and lizards — Illinois (gift).

NARJAL, H. W., Chicago.

1 snake skin — San José, Costa Rica (gift).

NOLAN, MRS. M. C., Chicago.

54 mounted birds, 10 mounted mammals—Pennsylvania and Kansas (gift).

ODELL, C. L., Chicago.

1 dobson (male) — Geneva, Illinois (gift).

PRAY, LEON L., Chicago.

8 bird-lice — Illinois (gift).

10 fishes — Michigan (gift).

8 frogs and toads — Michigan (gift).

RAMSDEN, CHARLES T., Guantanamo, Cuba.

12 birds — Cuba (gift).

SAN DIEGO SOCIETY OF NATURAL HISTORY, San Diego, California.

4 fishes and salamanders — southern California (exchange).

WALTERS, LEON L., Chicago.

6 catfishes — Chicago Ridge, Illinois (gift).

WEISS, HARRY B., New Brunswick, New Jersey.

3 beetles — Summit and Riverton, New Jersey (gift).

WILLIAMSON, E. B., Bluffton, Indiana.

1 albino red squirrel — Bluffton, Indiana (gift).

WOLCOTT, A. B., Chicago.

20 sawflies — Chicago (gift).

SECTION OF PHOTOGRAPHY.

FIELD MUSEUM OF NATURAL HISTORY.

Made by Section:

1290 negatives and prints of Museum specimens.

THE LIBRARY.

BOOKS, PAMPHLETS, AND SERIALS

(ACCESSIONS ARE BY EXCHANGE UNLESS OTHERWISE DESIGNATED.)

AFRICA

Durban Museum	2
East Africa and Uganda Natural History Society, Nairobi	1
Geological Society, Johannesburg	2
Rhodesia Scientific Association, Bulawayo	1
Royal Society, Cape Town	1
South African Association for Advancement of Science, Cape Town	1
South African Museum, Cape Town	2

ARGENTINA

Academia de Ciencias, Cordoba	1
Facultad de Filosofía y Letras, Buenos Aires	1

AUSTRALIA

Austalian Museum, Sydney	1
Australian Ornithologists' Union, Melbourne	1
Botanic Gardens and Government Domains, Sydney	1
Department of Agriculture, Adelaide	1
Department of Agriculture, Sydney	1
Department of Fisheries, Sydney	2
Department of Mines, Sydney	4
Field Naturalists' Club, Melbourne	1
Forestry Commission, Sydney (gift)	2
Geological Survey, Perth	3
Government of the Commonwealth, Melbourne	3
Linnean Society of New South Wales, Sydney	1
National Herbarium, Melbourne	1
Public Library, Museum and Art Gallery, Adelaide	1
Public Library, Museums and National Gallery of Victoria, Melbourne	2
Queensland Department of Mines, Brisbane	4
Royal Society of New South Wales, Sydney	1
Royal Society of Queensland, Brisbane	2
Royal Society of Tasmania, Hobart	2
Royal Society of Victoria, Melbourne	1
South Australia Ornithological Society, Adelaide	1
Tasmania Department of Agriculture, Hobart	2
Technical Museum, Sydney	1
Victoria Department of Agriculture, Melbourne	2
Western Australia Geological Survey, Perth.	2

BRAZIL

Bibliotheca Nacional, Rio de Janeiro	1
Escola Superior de Agricultura e Medicina Veterinaria, Pinheiro	1
Instituto Agronomico de Estado, Sao Paulo	1
Instituto Archeologico e Geographico Pernambucano, Recife	1

BRITISH GUIANA

Royal Agricultural and Commercial Society, Demerara	1
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CANADA

British Columbia Bureau of Mines	1
Department of Agriculture, Ottawa	7
Department of Agriculture, Victoria	2
Department of Marine and Fisheries, Ottawa	1
Department of Mines, Ottawa	2
Department of Mines, Victoria	1
Department of the Interior, Geological Survey, Ottawa	8
Horticultural Societies of Ontario, Toronto	1
McGill University, Montreal	3
Minister of Education, Toronto	1
Naturaliste Canadien, Quebec	1
Numismatics and Antiquarian Society, Montreal	1
Ottawa Field Naturalists' Club, Ottawa	1
Provincial Museum, Victoria	1
Royal Canadian Institute, Toronto	1
Royal Society of Canada, Ottawa	1

CEYLON

Royal Botanic Garden, Peradeniya 2

CHILE

Biblioteca Nacional, Santiago de Chile 1

CHINA

Botanical and Forestry Department, Hong-Kong 1

Royal Asiatic Society, North China Branch, Shanghai 1

DENMARK

Naturhistorisk Forening, Copenhagen 2

Société Royale des Antiquités du Nord, Copenhagen 3

FIJI ISLANDS

Fijian Society, Suva, Fiji Islands (gift) 1

FRANCE

Académie des Sciences, Paris 2

L'Ecole Langues Orientales Vivantes, Paris 3

Muséum National d'Histoire Naturelle, Paris 1

La Nature, Paris 1

Société de Géographie, Paris 1

Société de Géographie, Toulouse 1

Société Nationale d'Agriculture, Sciences et Arts, Angers 1

Société Zoologique, Paris 1

GREAT BRITAIN

Anthropological Institute of Great Britain and Ireland, London 1

Ashmolean Natural History Society of Oxfordshire, Oxford 1

Belfast Natural History and Philosophical Society 1

Brighton and Hove Natural History and Philosophical Society, Brighton 1

Bristol Museum and Art Gallery 1

British Association for the Advancement of Science, London 1

British Museum (Natural History), London 5

Cambridge Philosophical Society 1

Cambridge University Library 1

Cardiff Naturalists' Society 1

Dove Marine Laboratory, Cullercoats, Northumberland 1

Dumfriesshire and Galloway Natural History and Antiquarian Society,
Dumfries 1

Fisheries Board, Edinburgh 1

Geographical Society, London 1

Great Britain Geological Survey, London 1

Imperial Bureau of Entomology, London 2

Imperial College of Science and Technology, London 1

Japan Society of London 2

Lancashire Sea Fisheries Laboratories, Liverpool 1

Linnean Society, London 3

Liverpool Biological Society 2

Manchester Literary and Philosophical Society 1

Manchester Museum 1

Marine Biological Association of the United Kingdom, Plymouth 2

National Museum of Wales, Cardiff 1

Royal Botanic Gardens, Edinburgh 2

Royal Botanic Gardens, Kew	2
Royal Colonial Institute, London	1
Royal Geographical Society, London	2
Royal Society, London	1
Royal Society of Arts, London	1
Royal Society of Edinburgh	2
Tring Zoological Museum	1

INDIA

Anthropological Society, Bombay	2
Archæological Survey, Calcutta	4
Archæological Survey, Lahore	1
Botanical Survey, Calcutta	1
Department of Agriculture, Madras	1
Department of Agriculture, Pusa	2
Geological Survey, Calcutta	1
Government Museum, Madras	1
Hyderabad Archæological Society (gift)	3
National Indian Association, Calcutta (gift)	1
Royal Asiatic Society, Straits Branch, Singapore	3
Royal Botanic Gardens, Calcutta	1
Superintendent of Government Printing	2

ITALY

Accademia Giornia di Scienze Naturali, Catania	1
Istituto Botanico Dell'Universita de Pavia	1
Istituto Geografico de Agostini, Novara	1
Societa Italiana di Scienze Naturali, Milan	1
Societa Romana di Antropologia, Rome	1

JAPAN

Bureau of Productive Industry Formosa Government, Taihoku	1
Geological Survey, Tokyo	1
Imperial University of Tokyo, College of Agriculture	1
Imperial University of Tokyo, College of Science	2
Tohoku Imperial University, Sendai	1
Tokyo Botanical Society	1

JAVA

Bataviaasch Genootschap van Kunsten en Wetenschappen, Batavia	2
Department of Agriculture, Buitenzorg	5
Department van Landbouw, Buitenzorg	3
Jardin Botanique, Buitenzorg	1

KOREA

Government-General Chosen, Seoul	1
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MEXICO

Director General de Estadistica, Mexico	2
Instituto Geologico, Mexico	2
Sociedad Cientifica "Antonio Alzate," Mexico	1
Sociedad Mexicana de Geografia y Estadistica, Mexico	2

NETHERLANDS

Bataafsch Genootschap der Proefonde r-vindelijke Wijsbegeerte, Rotterdam	1
K. Bibliotheek, Hague	1

268 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

K. Instituut voor de Taal, Land-en Volkenkunde van Nederlandsch Indie, 's Gravenhage	2
K. Nederlandsch Aardijkskundig Genootschap, Amsterdam	1
Rijks Ethnographisch Museum, Leiden	1
Rijks Museum van Natuurlijks Histoire, Leiden	2
NEW ZEALAND	
Auckland Institute and Museum, Wellington	2
Department of Agriculture, Wellington	1
Department of Mines, Wellington	2
Geological Survey, Wellington	4
New Zealand Institute, Wellington	2
NORWAY	
Bergens Museum	2
Physiografiske Forening, Christiania	2
Tromsø Museum	2
PERU	
Cuerpo de Ingenieros de Minas, Lima	1
Sociedad Geografica, Lima	2
PORTUGAL	
Academia das Sciencias, Lisbon	3
Instituto D'Anatomie, Lisbon	2
Société Portugaise de Science Naturelle, Lisbon	
SPAIN	
Museo de Ciencias Naturales, Madrid	8
Sociedad Española de Historia Natural, Madrid	2
SWEDEN	
K. Biblioteket, Stockholm	2
Svenska Sällskapet för Antropologi och Geografi, Stockholm	1
SWITZERLAND	
Botanic Garden, Zürich	1
Musée d'Histoire Naturelle, Lausanne	1
Naturforschende Gesellschaft, Basel	1
Ostschweizerische Geograph.—Commerc. Gesellschaft, St. Gallen	1
Société Botanique de Genève, Geneva	1
Société de Physique et d' Histoire Naturelle, Geneva	2
Société des Sciences Naturelles, Fribourg	1
Société Neuchateloise de Géographie	2
Société Zoologique de Genève, Geneva	1
WEST INDIES	
Agricultural Experiment Station, Porto Rico	1
Biblioteca Nacional, Havana	1
Department of Agriculture, Kingston	1
Imperial Department of Agriculture, Barbadoes	1
Jamaica Institute, Kingston	1
Trinidad and Tobago Department of Agriculture, Port of Spain	2
Universidad de la Habana, Havana	2
Baker, R. T., Sydney, N. S. W.	2
Best, Elsdon, Wellington, New Zealand (gift)	1

Carpenter, G. H., Dublin, Ireland	1
Chodat, R., Geneva, Switzerland (gift)	1
Costantin, M. J., Paris, France (gift)	1
Debenedetti, Salvador, Buenos Aires, Brazil (gift)	1
Despoll, Giuseppe, Malta	8
Dunod, H., Paris, France	3
Gleerup, C. W. K., Lund, Sweden	1
Lambe, Lawrence, Ottawa, Canada (gift)	1
Larrea, C. M., Quito, Ecuador (gift)	1
Lehmann, Netsche R., Buenos Aires, Brazil	1
Maiden, J. H., Sydney, N. S. W.	1
Marshall, Sir John, Calcutta, India (gift)	1
Rosenburg, G. A., Copenhagen, Denmark (gift)	1
Steensby, H. P., Copenhagen, Denmark (gift)	1
ALABAMA	
Agricultural Experiment Station, Auburn	1
ARIZONA	
Agricultural Experiment Station, Tucson	2
CALIFORNIA	
Agricultural Experiment Station, Berkeley	1
California Academy of Sciences, San Francisco	2
Cooper Ornithological Club, Hollywood	1
Fish and Game Commission, San Francisco	1
Leland Stanford Junior University, Stanford University	2
Los Angeles County Museum of History, Science and Art	1
Pioneer Western Lumberman, Sacramento	1
Pomona College, Claremont	2
State Board of Forestry, Sacramento	1
State Mining Bureau, Sacramento	4
University of California, Berkeley	18
COLORADO	
Agricultural Experiment Station, Fort Collins	1
Bureau of Mines, Denver	1
Colorado College, Colorado Springs	1
Colorado Museum of Natural History, Denver	1
State Geological Survey, Boulder	3
CONNECTICUT	
Agricultural Experiment Station, New Haven	2
American Oriental Society, New Haven	1
Connecticut Academy of Arts and Sciences, New Haven	2
Hartford Public Library	2
Hartford Public Museum	1
Meriden Bird Club (gift)	2
Wesleyan University, New Haven	1
Yale University, New Haven	2
FLORIDA	
Florida Geological Survey, Tallahassee	2
GEORGIA	
Geological Survey, Atlanta	1

HAWAIIAN ISLANDS

Agricultural Experiment Station, Honolulu	2
Bernice Pauahi Bishop Museum, Honolulu	1
Board of Commissions of Agriculture and Forestry, Honolulu	1
Hawaiian Entomological Society, Honolulu	3
Honolulu Historical Society,	2

IDAHO

Mining Industry, Boise	1
University of Idaho, Moscow	1

ILLINOIS

Agricultural Experiment Station, Urbana	1
Art Institute of Chicago	1
Chicago Academy of Sciences	3
Chicago Historical Society	1
Chicago Library Club (gift)	1
Chicago Public Library	2
Engineering and Cement World, Chicago (gift)	1
Hardwood Record, Chicago (gift)	1
John Crerar Library, Chicago	3
Lake Forest College	1
Lewis Institute, Chicago	1
Newberry Library, Chicago	1
Northwestern University, Evanston	1
Open Court Publishing Company, Chicago	1
State Academy of Science, Springfield	1
State Board of Agriculture, Springfield	1
State Historical Library, Springfield	2
State Laboratory of Natural History, Urbana	1
Sweet, Wallach and Company, Chicago (gift)	1
University of Chicago	26
University of Illinois, Urbana	10

INDIANA

Department of Geology and Natural History, Indianapolis	1
Indiana Academy of Science, Indianapolis	1
Purdue University, Lafayette	12
State Entomologist, Indianapolis (gift)	2
Studebaker Corporation, South Bend (gift)	1
University of Notre Dame	1

IOWA

Academy of Sciences, Des Moines	1
Geological Survey, Des Moines	1
Iowa State College, Ames	6
Iowa State Horticultural Society, Des Moines	1
State Highway Commission, Des Moines	1
University of Iowa, Iowa City	2

KANSAS

Academy of Science, Topeka	2
Agricultural Experiment Station, Manhattan	2
State Board of Agriculture, Topeka	1

State Geological Survey, Lawrence	3
University of Kansas, Geological Survey, Lawrence	2
KENTUCKY	
Agricultural Experiment Station, Lexington	2
Kentucky Geological Survey, Lexington (gift)	2
LOUISIANA	
Agricultural Experiment Station, Baton Rouge	2
Department of Conservation, New Orleans (gift)	2
State Museum, New Orleans	1
MAINE	
Bowdoin College, Brunswick	2
State Horticulturalist, Waterville	1
State Library, Augusta	4
MARYLAND	
Agricultural Experiment Station, College Park	2
Enoch Pratt Free Library, Baltimore	2
Geological Survey, Baltimore	3
Johns Hopkins University, Baltimore	2
Maryland Institute, Baltimore	1
State Board of Forestry, Baltimore	2
MASSACHUSETTS	
Agricultural Experiment Station, Amherst	1
American Academy of Arts and Sciences, Boston	1
American Antiquarian Society, Boston	1
Amherst College	1
Archæological Institute of America, Boston	1
Boston Museum of Fine Arts	2
Boston Public Library	2
Clark University, Worcester	1
Essex Institute, Salem	2
Harvard Museum of Comparative Zoölogy, Cambridge	2
Harvard University, Gray Herbarium, Cambridge	2
Horticultural Society, Boston	2
New Bedford Free Public Library	2
Peabody Institute	1
Peabody Museum, Cambridge	1
Peabody Museum, Salem	2
Salem Public Library	2
Springfield City Library Association	1
Springfield Natural History Museum	1
Tufts College, Boston	1
Williams College, Williamstown	2
Worcester County Horticultural Society, Worcester	2
Worcester Free Public Library	1
MICHIGAN	
Academy of Sciences, Ann Arbor	1
Agricultural Experiment Station, Agricultural College	3
Art and Museum Commissioners, Grand Rapids	1
Department of Parks and Boulevards, Detroit	1

Detroit Museum of Art	1
Game, Fish and Forest Commission, Lansing (gift)	1
Geological and Biological Survey, Lansing	2
Grand Rapids Public Library	2
Michigan College of Mines, Houghton	1
National Educational Association of the United States, Ann Arbor	1
Parke Davis and Company, Detroit (gift)	1
State Board of Agriculture, Lansing	1
State Board of Library Commissions, Lansing	1
State Library, Lansing	1
University of Michigan, Ann Arbor	2
MINNESOTA	
Academy of Sciences, Minneapolis	1
Agricultural Experiment Station, St. Paul	2
Minneapolis Society of Fine Arts	1
University of Minnesota, Minneapolis	4
MISSISSIPPI	
Agricultural Experiment Station, Agricultural College	
MISSOURI	
Agricultural Experiment Station, Columbia	1
Bureau of Geology and Mines, Jefferson City	2
City Art Museum, St. Louis	1
Missouri Botanical Garden, St. Louis	1
St. Louis Academy of Sciences	1
St. Louis Natural History Museum Association (gift)	1
St. Louis Public Library	2
St. Louis University	1
University of Missouri, Columbia	2
Washington University, St. Louis	2
NEBRASKA	
Agricultural Experiment Station, Lincoln	1
Game and Fish Commission, Lincoln (gift)	1
Public Library, Omaha	1
University of Nebraska, Lincoln	2
NEVADA	
Agricultural Experiment Station, Carson City	2
State University, Reno	2
NEW HAMPSHIRE	
Meriden Bird Club (gift)	1
NEW JERSEY	
Department of Conservation and Development, Trenton	2
Geological Survey, Trenton	1
Horticultural Society, Trenton	1
New Jersey Mosquito Extermination Association, Trenton (gift)	2
Newark Museum Association	2
Princeton University	1
Rutgers College, New Brunswick	1
State Agricultural Experiment Station, Trenton	1
State Museum, Trenton	2

NEW YORK

Agricultural Experiment Station, Geneva	3
American Geographical Society, New York City	3
American Hellenic Society, New York City (gift)	1
American Institute of Mining Engineers, New York City	2
American Museum of Natural History, New York City	20
Brooklyn Botanic Garden	3
Brooklyn Institute of Arts and Sciences	5
Carnegie Foundation for the Advancement of Teaching (gift)	1
Columbia University, New York City	1
Conservation Commission, Albany (gift)	3
Cornell University, Ithaca	29
Forest and Stream Publishing Company, New York City	2
Metropolitan Museum of Art, New York City	3
New York Academy of Sciences, New York City	1
New York Botanical Garden, New York City	1
New York Historical Society, New York City	2
Pratt Institute Free Library, Brooklyn	2
Public Library, New York City	1
Rochester Academy of Sciences	1
State College of Forestry, Syracuse	1
State Library, Albany	1
State Museum, Albany	8
Staten Island Association of Arts and Sciences, New York City	2
Stone Publishing Company, New York City	2
Syracuse University	1
Zoological Society, New York City	2

NORTH CAROLINA

Elisha Mitchell Scientific Society, Chapel Hill	3
Geological and Economic Survey, Raleigh	1

OHIO

Agricultural Experiment Station, Wooster	2
Cincinnati Museum Association	1
Cleveland Art Museum	1
Cleveland Public Library	2
Geological Survey, Columbus	3
Lloyd Library, Cincinnati	1
Marietta College	1
Oberlin College	1
State Archaeological and Historical Society, Columbus	1
State University, Columbus	8
University of Cincinnati	2
Wilson Ornithological Club, Oberlin	1

OKLAHOMA

Geological Survey, Norman	5
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OREGON

State Forester, Salem	2
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PENNSYLVANIA

American Entomological Society, Philadelphia	4
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274 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

American Journal of Pharmacy, Philadelphia	1
American Philosophical Society, Philadelphia	1
Association of Engineering Societies, Philadelphia	1
Bryn Mawr College	1
Carnegie Institute, Pittsburgh	2
Carnegie Library, Pittsburgh	2
Carnegie Museum, Pittsburgh	2
Engineers' Society of Western Pennsylvania, Pittsburgh	1
Franklin Institute, Philadelphia	2
Pennsylvania Museum, Philadelphia	1
Pennsylvania Museum and School of Industrial Art, Philadelphia	1
Philadelphia Academy of Natural Sciences	1
Philadelphia Commercial Museum	1
State Department of Agriculture, Harrisburg	1
Sullivant Moss Society, Pittsburgh	1
University of Pennsylvania, Philadelphia	2
Wagner Free Institute of Science, Philadelphia	1
PHILIPPINE ISLANDS	
Bureau of Education, Manila	2
Department of Agriculture, Manila	1
Department of Interior, Bureau of Forestry, Manila	1
Department of Interior, Bureau of Science, Manila	8
Department of Public Instruction, Manila	2
RHODE ISLAND	
Roger Williams Park Museum, Providence	1
SOUTH CAROLINA	
Charleston Museum	1
SOUTH DAKOTA	
Agricultural Experiment Station, Brookings.	2
Geological Survey, Vermillion	2
TENNESSEE	
Department of Game and Fish, Nashville (gift)	1
State Geological Survey, Nashville	2
TEXAS	
Scientific Society, San Antonio	1
UTAH	
Agricultural Experiment Station, Logan	1
VERMONT	
State Forester, Burlington	1
VIRGINIA	
State Library, Richmond	1
WASHINGTON	
State Geological Survey, Olympia	1
State Library, Seattle	1
State University, Seattle	4
WASHINGTON, D. C.	
American Academy in Rome	1
American Mining Congress	1

Carnegie Endowment for International Peace (gift)	
National Academy of Sciences	9
National Education Association (gift)	2
National Geographic Society	2
National Zoological Park	1
Pan-American Union	7
United States Government	541

WEST VIRGINIA

Agricultural Experiment Station, Morgantown	2
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WISCONSIN

Academy of Sciences, Madison	1
Agricultural Experiment Station, Madison	2
Archæological Society, Milwaukee	1
Beloit College	2
Geological and Natural History Survey, Madison	13
Natural History Society, Madison	1
State Historical Society, Madison	1
State Horticultural Society, Madison	2
University of Wisconsin, Madison	7

WYOMING

Agricultural Experiment Station, Laramie	1
Ayer, Edward E., (gift)	3
Barnes, William, Decatur, Illinois	1
Beckwith, Florence, Rochester, New York (gift)	3
Burkholder, Walter H., Ithaca, New York (gift)	4
Casey, Thomas L., Washington, D. C. (gift)	2
Chalmers, William J., Chicago (gift)	1
Cockerell, T. D. A., Boulder, Colorado	14
Cole, Fay-Cooper, Chicago	1
Cook, Melville T., New Brunswick, New Jersey	3
Evans, Herbert H., Norfolk, Virginia (gift)	1
Farwell, Oliver A., Detroit, Michigan	2
Fernald, M. L., Cambridge, Massachusetts	2
Ford, W. E., New Haven, Connecticut (gift)	4
Freer, Charles L., Detroit, Michigan (gift)	1
Gerhard, W. J., Chicago	16
Hall, Ivan C., Berkeley, California (gift)	6
Holland, W. J., Pittsburgh, Pennsylvania (gift)	1
Hubbs, Carl L., Chicago	94
Kendall, W. C., Washington, D. C.	1
Knotts, A. F., Gary, Indiana (gift)	1
Laufer, Berthold, Chicago	9
Laurvik, J. Nilsen, San Francisco, California (gift)	1
Liljeblad, Emil, Chicago	1
McCrea, William S., Chicago (gift)	2
Mason, J. Alden, Chicago	2
Massey, L. M., Ithaca, New York	6
Merrill, Elmer D., Manila, Philippine Islands	58
Millsbaugh, C. F., Chicago	30

276 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

Moore, Clarence S., Philadelphia	1
Morse, Edward S., Salem, Massachusetts	1
Osgood, W. H., Chicago	42
Owen, C. L., Chicago	2
Payser, W. A., Philadelphia	1
Penrose, R. A. F., Jr., Philadelphia	1
Randall, T. A. and Company, Indianapolis, Indiana	1
Redfield, Casper L., Chicago (gift)	2
Sargent, C. S., Jamaica Plain, Massachusetts	1
Sawyer, W. H., Jr., Lewiston, Maine (gift)	1
Schaff, Wilfred H., Philadelphia (gift)	1
Starr, Frederick, Chicago	2
Weir, James R., Missoula, Montana (gift)	33
Whitehouse, F. C., Red Deer, Alta, Canada (gift)	1

ARTICLES OF INCORPORATION.

STATE OF ILLINOIS.

DEPARTMENT OF STATE.

WILLIAM H. HINRICHSEN, *Secretary of State.*

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

Whereas, a Certificate duly signed and acknowledged having been filed in the office of the Secretary of State, on the 16th day of September, A. D. 1893, for the organization of the COLUMBIAN MUSEUM OF CHICAGO, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereto attached.

Now, therefore, I, William H. Hinrichsen, Secretary of State of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said COLUMBIAN MUSEUM OF CHICAGO is a legally organized Corporation under the laws of this State.

In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of State. Done at the City of Springfield, this 16th day of September, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the United States the one hundred and eighteenth.

W. H. HINRICHSEN,
Secretary of State.

[SEAL.]

TO HON. WILLIAM H. HINRICHSEN,

SECRETARY OF STATE:

SIR:

We, the undersigned citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and that for the purposes of such organization we hereby state as follows, to-wit:

1. The name of such corporation is the "COLUMBIAN MUSEUM OF CHICAGO."

2. The object for which it is formed is for the accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating Art, Archaeology, Science and History.

3. The management of the aforesaid museum shall be vested in a Board of FIFTEEN (15) TRUSTEES, five of whom are to be elected every year.

4. The following named persons are hereby selected as the Trustees for the first year of its corporate existence:

Ed. B. Ayer, Charles B. Farwell, George E. Adams, George R. Davis, Charles L. Hutchinson, Daniel H. Burnham, John A. Roche, M. C. Bullock, Emil G. Hirsch,

278 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

James W. Ellsworth, Allison V. Armour, O. F. Aldis, Edwin Walker, John C. Black and Frank W. Gunsaulus.

5. The location of the Museum is in the City of Chicago, County of Cook, and State of Illinois.

(Signed),

George E. Adams, C. B. Farwell, Sidney C. Eastman, F. W. Putnam, Robert McMurdy, Andrew Peterson, L. J. Gage, Charles L. Hutchinson, Ebenezer Buckingham, Andrew McNally, Edward E. Ayer, John M. Clark, Herman H. Kohlsaat, George Schneider, Henry H. Getty, William R. Harper, Franklin H. Head, E. G. Keith, J. Irving Pearce, Azel F. Hatch, Henry Wade Rogers, Thomas B. Bryan, L. Z. Leiter, A. C. Bartlett, A. A. Sprague, A. C. McClurg, James W. Scott, Geo. F. Bissell, John R. Walsh, Chas. Fitzsimmons, John A. Roche, E. B. McCagg, Owen F. Aldis, Ferdinand W. Peck, James H. Dole, Joseph Stockton, Edward B. Butler, John McConnell, R. A. Waller, H. C. Chatfield-Taylor, A. Crawford, Wm. Sooy Smith, P. S. Peterson, John C. Black, Jno. J. Mitchell, C. F. Gunther, George R. Davis, Stephen A. Forbes, Robert W. Patterson, Jr., M. C. Bullock, Edwin Walker, George M. Pullman, William E. Curtis, James W. Ellsworth, William E. Hale, Wm. T. Baker, Martin A. Ryerson, Huntington W. Jackson, N. B. Ream, Norman Williams, Melville E. Stone, Bryan Lathrop, Eliphalet W. Blatchford, Philip D. Armour.

STATE OF ILLINOIS }
COOK COUNTY } ss.

I, G. R. MITCHELL, a NOTARY PUBLIC in and for said County, do hereby certify that the foregoing petitioners personally appeared before me and acknowledged severally that they signed the foregoing petition as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this 14th day of September, 1893.

[SEAL.] G. R. MITCHELL,
NOTARY PUBLIC, COOK COUNTY, ILL.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the corporate members held the 25th day of June, 1894, the name of the COLUMBIAN MUSEUM was changed to FIELD COLUMBIAN MUSEUM. A certificate to this effect was filed June 26, 1894, in the office of the Secretary of State for Illinois.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the corporate members held the 8th day of November, 1905, the name of the FIELD COLUMBIAN MUSEUM was changed to FIELD MUSEUM OF NATURAL HISTORY. A certificate to this effect was filed November 10, 1905, in the office of the Secretary of State for Illinois.

AMENDED BY-LAWS.

(JUNE 12, 1916.)

ARTICLE I.

MEMBERS.

SECTION 1. Members shall be of five classes, Annual Members, Corporate Members, Life Members, Patrons and Honorary Members.

SEC. 2. Annual Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of ten dollars (\$10.00), payable within thirty days after notice of election, and within thirty days after each recurring annual date. The failure of any person to make such initiatory payment and such annual payments within said time shall, at the option of the Board of Trustees, be sufficient grounds for the forfeiture of an annual membership.

This said annual membership shall entitle the member to:

First.— Free admittance for the member and family, to the Museum on any day.

Second.— Ten tickets every year, admitting the bearer to the Museum on pay days.

Third.— A copy of all publications of the Museum when requested.

Fourth.— Invitations to all special exhibits, receptions, lectures, or other functions which may be given at the Museum.

SEC. 3. The Corporate Members shall consist of the persons named in the articles of incorporation, and of such other persons as shall be chosen from time to time by the Board of Trustees at any of its meetings, upon the recommendation of the Executive Committee; provided, that such persons named in the articles of incorporation shall, within ninety days from the adoption of these By-Laws, and persons hereafter chosen as Corporate Members shall, within ninety days of their election, pay into the treasury the sum of twenty dollars (\$20.00) or more. The failure of any person to make such payment within said time, shall, at the option of the Board of Trustees, be ground for forfeiture of his corporate membership. Corporate Members becoming Life Members, Patrons or Honorary Members shall be exempt from dues. Annual meetings of said Corporate Members shall be held at the same place and on the same day that the annual meeting of the Board of Trustees is held.

SEC. 4. Any person paying into the treasury the sum of five hundred dollars (\$500.00), at any one time, shall, upon the unanimous vote of the Board, become a Life Member. Life Members shall be exempt from all dues.

SEC. 5. Patrons shall be chosen by the Board upon recommendation of the Executive Committee from among persons who have rendered eminent service to

the Museum. They shall be exempt from all dues, and, by virtue of their election as Patrons, shall also be Corporate Members.

SEC. 6. Honorary Members shall be chosen by the Board from among persons who have rendered eminent service to science, and only upon unanimous nomination of the Executive Committee. They shall be exempt from all dues.

ARTICLE II.

BOARD OF TRUSTEES.

SECTION 1. The Board of Trustees shall consist of fifteen members. The respective members of the Board now in office, and those who shall hereafter be elected, shall hold office during life. Vacancies occurring in the Board shall be filled at a regular meeting of the Board, upon the nomination of the Executive Committee made at a preceding regular meeting, by a majority vote of the members of the Board present.

SEC. 2. Regular meetings of the Board shall be held on the second Monday of each month. Special meetings may be called at any time by the President, and shall be called by the Secretary upon the written request of three Trustees. Five Trustees shall constitute a quorum, except for the election of officers or the adoption of the Annual Budget, when seven Trustees shall be required, but meetings may be adjourned by any less number from day to day, or to a day fixed, previous to the next regular meeting.

SEC. 3. Reasonable written notice, designating the time and place of holding meetings, shall be given by the Secretary.

ARTICLE III.

HONORARY TRUSTEES

SECTION 1. As a mark of respect, and in appreciation of services performed for the Institution, those Trustees who by reason of inability, on account of change of residence, or for other cause or from indisposition to serve longer in such capacity shall resign their place upon the Board, may be elected, by a majority of those present at any regular meeting of the Board, an Honorary Trustee for life. Such Honorary Trustee will receive notice of all meetings of the Board of Trustees, whether regular or special, and will be expected to be present at all such meetings and participate in the deliberations thereof, but an Honorary Trustee shall not have the right to vote.

ARTICLE IV.

OFFICERS.

SECTION 1. The officers shall be a President, a First Vice-President, a Second Vice-President, a Secretary, an Assistant Secretary and a Treasurer. They shall be chosen by ballot by the Board of Trustees, a majority of those present and voting being necessary to elect. The President, the First Vice-President, and the Second Vice-President shall be chosen from among the members of the Board of Trustees. The meeting for the election of officers shall be held on the second Monday of January of each year, and shall be called the Annual Meeting.

SEC. 2. The officers shall hold office for one year, or until their successors are elected and qualified, but any officer may be removed at any regular meeting of the

Board of Trustees by a vote of two-thirds of all the members of the Board. Vacancies in any office may be filled by the Board at any meeting.

SEC. 3. The officers shall perform such duties as ordinarily appertain to their respective offices, and such as shall be prescribed by the By-Laws, or designated from time to time by the Board of Trustees.

ARTICLE V.

THE TREASURER.

SECTION 1. The Treasurer shall be custodian of the funds of the Corporation, except as hereinafter provided. He shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents. But no warrants shall be issued, except in conformity with a regularly prepared voucher, giving the name of the payee and stating the occasion for the expenditure, and verified and approved as hereinafter prescribed. It shall be no part of the duties of the Treasurer to see that the warrants have been issued in conformity with such vouchers.

SEC. 2. The securities and muniments of title belonging to the corporation shall be placed in the custody of some Trust Company of Chicago to be designated by the Board of Trustees, which Trust Company shall collect the income and principal of said securities as the same become due, and pay same to the Treasurer, except as hereinafter provided. Said Trust Company shall allow access to and deliver any or all securities or muniments of title to the joint order of the following officers, namely: The President or one of the Vice-Presidents, jointly with the Chairman, or one of the Vice-Chairmen, of the Finance Committee of the Museum.

SEC. 3. The Treasurer shall give bond in such amount, and with such sureties, as shall be approved by the Board of Trustees.

SEC. 4. All vouchers executed for the payment of liabilities incurred in the administration of the Museum, shall be verified by the Auditor, and approved for payment by the Director, and the Chairman of the Administration Committee. All vouchers executed for expenditures for the construction or reconstruction of the Museum building, or buildings, shall be verified by the Auditor and approved for payment by the Chairman of the Building Committee. All vouchers executed in connection with the investments of the Corporation, or, in any way having to do with the endowment funds of the Corporation, shall be verified by the Auditor and approved for payment by the Chairman of the Finance Committee.

SEC. 5. The Harris Trust and Savings Bank of Chicago shall be Custodian of "The N. W. Harris Public School Extension of Field Museum" fund. The Bank shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents. But no warrant shall be issued, except in conformity with a regularly prepared voucher, giving the name of the payee and stating the occasion for the expenditure, and verified and approved by the Auditor, the Director and Chairman of the Administration Committee. It shall be no part of the duties of the said Custodian to see that the warrants have been issued in conformity with such vouchers.

ARTICLE VI.

THE DIRECTOR.

SECTION 1. The Board of Trustees shall elect a Director of the Museum, who shall remain in office until his successor shall be elected. He shall have immediate charge and supervision of the Museum, and shall control the operations of the institution, subject to the authority of the Board of Trustees and its Committees. The Director shall be the official medium of communication between the Board, or its Committees, and the scientific staff and maintenance force.

SEC. 2. There shall be four scientific departments of the Museum — Anthropology, Botany, Geology and Zoology, each under the charge of a Curator, subject to the authority of the Director. The Curators shall be appointed by the Board upon the recommendation of the Director, and shall serve during the pleasure of the Board. Subordinate staff officers in the scientific departments shall be appointed and removed by the Director upon the recommendation of the Curators of the respective Departments. The Director shall have authority to employ and remove all other employees of the Museum.

SEC. 3. The Director shall make report to the Board at each regular meeting, recounting the operations of the Museum for the previous month. At the Annual Meeting, the Director shall make an Annual Report, reviewing the work of the Museum for the previous year, which Annual Report shall be published in pamphlet form for the information of the Trustees and Members, and for free distribution in such number as the board may direct.

ARTICLE VII.

AUDITOR.

SECTION 1. The Board shall appoint an Auditor, who shall hold his office during the pleasure of the Board. He shall keep proper books of account, setting forth the financial condition and transactions of the Corporation, and of the Museum, and report thereon at each regular meeting, and at such other times as may be required by the Board. He shall certify to the correctness of all vouchers for the expenditure of the money of the corporation.

ARTICLE VIII.

COMMITTEES.

SECTION 1. There shall be six Committees as follows: Finance, Building, Auditing, Pension, Administration and Executive.

SEC. 2. The Finance, Auditing and Pension Committees shall each consist of three members, and the Building and Administration Committees shall each consist of five members. All members of these five Committees shall be elected by ballot by the Board at the Annual Meeting, and shall hold office for one year, and until their successors are elected and qualified. In electing the members of these Committees, the Board shall designate the Chairman and Vice-Chairman by the order in which the members are named in the respective Committee; the first member named shall be Chairman, the second named the Vice-Chairman, and the third named, Second Vice-Chairman, succession to the Chairmanship being in this order in the event of the absence or disability of the Chairman.

SEC. 3. The Executive Committee shall consist of the President of the Board, the Chairman of the Finance Committee, the Chairman of the Building Committee,

the Chairman of the Administration Committee, the Chairman of the Auditing Committee, the Chairman of the Pension Committee, and two other members of the Board to be elected by ballot at the Annual Meeting.

SEC. 4. Four members shall constitute a quorum of the Executive Committee; three members shall constitute a quorum of the Administration Committee, and in all other standing Committees, two members shall constitute a quorum. In the event that, owing to the absence or inability of members, a quorum of the regularly elected members cannot be present at any meeting of any Committee, then the Chairman thereof, or his successor, as herein provided, may summon any member of the Board of Trustees to act in place of the absentee.

SEC. 5. The Finance Committee shall have supervision of investing the endowment and other permanent funds of the Corporation, and the care of such real estate as may become its property. It shall have authority to invest, sell, and reinvest funds, subject to the approval of the Board.

SEC. 6. The Building Committee shall have supervision of the construction, reconstruction, and extension of any and all buildings used for Museum purposes.

SEC. 7. The Executive Committee shall be called together from time to time as the Chairman may consider necessary, or as he may be requested to do by three members of the Committee, to act upon such matters affecting the administration of the Museum as cannot await consideration at the Regular Monthly Meetings of the Board of Trustees. It shall, before the beginning of each fiscal year, prepare and submit to the Board an itemized Budget, setting forth the probable receipts from all sources for the ensuing year, and make recommendations as to the expenditures which should be made for routine maintenance and fixed charges. Upon the adoption of the Budget by the Board, the respective Committees shall be considered as authorized to make the expenditures detailed therein. No increase in the expenditures under any items of the Budget shall be made, except by authority of the Board of Trustees, but the Executive Committee shall have authority, in cases of emergency, to expend a further total sum not exceeding two thousand dollars in any one month.

SEC. 8. The Administration Committee shall have general supervision of the affairs of the Museum. The Committee shall hold one meeting each month with the Director at the Museum within a week preceding each Monthly Meeting of the Board of Trustees.

SEC. 9. The Auditing Committee shall have supervision over all accounting and bookkeeping, and full control of the financial records. It shall cause the same, once each year, or oftener, to be examined by an expert individual or firm, and shall transmit the report of such expert individual or firm to the Board at the next ensuing regular meeting after such examination shall have taken place.

SEC. 10. The Pension Committee shall determine by such means and processes as shall be established by the Board of Trustees to whom and in what amount the Pension Fund shall be distributed. These determinations or findings shall be subject to the approval of the Board of Trustees.

SEC. 11. The Chairman of each Committee shall report the acts and proceedings thereof at the next ensuing regular meeting of the Board.

SEC. 12. The President shall be ex-officio a member of all Committees and Chairman of the Executive Committee. Vacancies occurring in any Committee may be filled by ballot at any regular meeting of the Board.

ARTICLE IX.

NOMINATING COMMITTEE.

SECTION 1. At the November meeting of the Board, each year a Nominating Committee of three shall be chosen by lot. Said Committee shall make nominations for membership of the Finance Committee, the Building Committee, the Administration Committee, the Auditing Committee, and the Pension Committee, and for two members of the Executive Committee, from among the Trustees, to be submitted at the ensuing December meeting and voted upon at the following Annual Meeting in January.

ARTICLE X.

SECTION 1. Whenever the word "Museum" is employed in the By-Laws of the Corporation, it shall be taken to mean the building in which the Museum as an Institution is located and operated, the material exhibited, the material in study collections, or in storage, furniture, fixtures, cases, tools, records, books, and all appurtenances of the Institution, and the workings, researches, installations, expenditures, field work, laboratories, library, publications, lecture courses, and all scientific and maintenance activities.

SEC. 2. These By-Laws may be amended at any regular meeting of the Board of Trustees by a two-thirds vote of all the members present, provided the amendment shall have been proposed at a preceding regular meeting.

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HENRY HERING'S SCULPTURE FOR FIELD MUSEUM OF NATURAL HISTORY IN CHICAGO

By CHARLES OVER CORNELIUS

Conceived in the mind of a public-spirited citizen, and made possible of realization by his generosity, the Field Museum of Natural History in Chicago stands as a memorial to Marshall Field, its founder, and constitutes one of the chief architectural glories of the city. This great museum is destined to house extensive collections associated with the natural sciences and will function as an immense educational concordance. Easy of access from all parts of the city, overlooking the great open space of Grant Park to the north, and visible in its white majesty from far out upon the nearby lake, its site is unrivaled as a dignified and appropriate setting. The design has called forth a sustained architectural study with all that this implies, and the architects, Graham, Anderson, Probst and White, have given to the country a masterpiece in monumental building of a distinction and dignity commensurate with its purpose and origin.

The monumental sculptures created in conjunction with such a building form an essential element in its design. Their position, while not necessarily structural, is in a vital spot of the organism, esthetically considered, and the individual works themselves thus assume a responsibility for the success of the whole work altogether out of proportion to their size, since in them is the final focusing of the attention of the spectator.

The larger part of the exterior sculptural decoration of the building has been concentrated about the central motif of the north façade — the great Ionic portico with its flanking bays. In these two bays caryatid porches rest upon the basement course and above are horizontal panels of low relief. Against the attic of the portico are eight figures of colossal size, which complete the sculptural decoration here. On the south façade the caryatid porches are repeated and above the same horizontal panels similar to those facing the north. The interior sculpture consists of four figures surmounting engaged columns at either end of the central hall. This, then, summarizes the decorative sculpture — the caryatids and the four relief panels, the eight attic and the four interior figures.

For the sculptural embellishment the architects commissioned one

sculptor to execute the whole of this decoration — perhaps the second time on record that so extensive a task has been entrusted to the hands of one American sculptor. Henry Hering has utilized the opportunity presented him to create a group of architectural sculptures which is unsurpassed in America today. Throughout the work he has kept consciously before him the purposes for which each piece was designed, both as regards its subject and its placing upon the building, with the result that he has achieved a superlative consistency in the whole work, at the same time infusing into each figure the utmost individuality and distinction.

In the treatment of the caryatid figures there is observable a greater conventionality and a less definite expression of personality than in any others of the group. Here an actual structural problem had to be met and a nice transition from the strong foundation course was desirable. There are two types of caryatids which are to be duplicated, and while they are very similar in mass and movement, in detail they are absolutely individual. The inspiration is frankly Ionian and their dignity is as unquestionable as is their structural quality.

Above each caryatid porch the horizontal panel in relief represents one of the four main departments of the Museum — Anthropology, Zoölogy, Botany and Geology. The treatment here is very decorative, and by the use of one flying figure in each panel the same scale as that adopted in the other figures has been preserved while admitting the introduction of a definitely horizontal sense into the whole panel, contrasting effectively with the repeated verticals of the other figures and of the surrounding architecture. Interesting color is given by the wings, the drapery treatment and the floating ribbon which bears the name of the department symbolized in the figure. The length of the panel has also allowed of the introduction of vertical bands of exquisite decoration, each different in detail, though similar in general tone. The iconography of the four panels is exceptionally pleasing and the choice of symbols for each has brought into play the originality and discrimination of the sculptor.

The choice of subject for the attic figures exemplifies the generalization appropriate to the decoration of such a building. The four central figures above the columns represent the elements: Fire, Earth, Air and Water; the four flanking figures typify the four points of the compass: North, South, East and West. With this choice of subject comes the necessity of giving to the figures, each so general in its conception, definite and essential qualities and certain attributes which will differentiate each from the other and at the same time preserve the unity of the scheme. Of the attributes given to the figures their selection has

been so apt and their display so nice that no discussion need be entered into to add to their clarity.

The subtlety of so large a group fairly escapes expression in words. A broad balance has been obtained for the whole by reversing the poses of the two end figures and the similarity in the poses of the four centre-most figures. The light and shade have been studied for their effect in diffused light, and calculation had to be made for the position sixty-five feet above the spectator. In the placing of the figures in relation to the surrounding space, as in fact throughout most of the architecture of the building, the Greek rhythm of 1:2 has been observed.

While in the sculptor's treatment of the group there is this rhythm, this subtle balance and calculation of light and shade, there is withal a very correct uniformity. The decoration about the heads has a certain general similarity in its suggestion of a nimbus, but how infinitely varied in its detail and individual in its application! In all the figures the law of frontality is strictly observed; a knee may be bent or the head inclined, but the frontal line remains straight. The dress, although partaking more of the quality of costume than of drapery, shows in its treatment a reasoned use of the latter tendency with the Dorian chiton as a point of departure. The architectonic quality is also observable here in the insistent verticals of the folds with their suggested evolution from a columnar form. The details of costume are infinitely varied, and upon repeated examination the figures reveal great fertility of invention and richness of detail.

Much of the finest characterization has been reserved for the heads, in which the varied treatment of the eyes and mouth, the most expressive parts of the face, epitomizes the calmness or passion, the mysticism or nobility associated with each generality which the marble strives to present. The sculptural form in which the hair is cast in the figures of the "Four Points of the Compass" is particularly fine, and this interesting conventionality serves to give strength to the neck, a point which may also be remarked with reference to the caryatid figures.

The four interior figures are placed in the great central hall of the museum. This immense room, three hundred feet long and lighted from above, is entered from either end through a large arch. Each of the arches is flanked by tall engaged columns, with entablature decoratively used, and upon each stands a symbolic figure. The symbolism of these figures makes a subjective application of the building's use and suggests the various activities whose inspiration will lie within its walls; Natural Science and the Dissemination of Knowledge flanking one archway, Record and Research the other.

These figures appear first at a great distance and are placed where

they will be seen under a comparatively steady light from above. Their position is of no structural importance and their purpose is a purely decorative one. All of which facts contribute to the difference in treatment from the strictly architectural figures of the attic. The composition here is more varied and the feeling more personal.

The whole group is characterized by the eminent dignity and restraint which run throughout all of Mr. Herings' work — a dignity unfettered by academic formulæ nor yet disturbed by a factitious realism. In the sane mind of the trained sculptor these two extremes of classicism and realism have been fused into an expressive whole under the spell of his own individual approach. In this particular problem there was opportunity for a variety of treatment into which has been breathed much of the spirit of ancient Greece.

There are many who will concur in the opinion that the art of sculpture has reached and always will reach the broadest expression of its purpose when conceived and carried out with relation to architecture which it may be designed to enhance. Of the greatest sculpture which has come down to us from the past, by far the larger part is permeated by qualities suggested, if not imposed, by the architectural design of which it formed an essential part. When the art began to be employed upon works not destined as absolute units in an architectural scheme, it is yet the presence of definite architectonic qualities which contribute largely to the high essence of the creation. The presence of such qualities may not in itself be of predominant importance, but with their removal comes an immediate tendency toward a less dignified conception, a realism, natural perchance, and by reason of its very naturalness a thing to be controlled and disciplined.

The time is not yet ripe when we may judge the relative position of the architectural sculpture of today, and particularly that of America, where traditions in art are most conspicuous by their absence, and where such various traditions as have been carried over into the new world from the old are being simultaneously followed in the works of various individuals. American sculpture has sprung from the heads and hands of a few scattered individuals almost in its present growth, for what is a century and a half in the development of an art from the first dawn of its heralding in a new land? The largest opportunity for the development of such American sculpture must lie in the category of monumental work for public or semi-public possession.

In such work there must be a greater generalization, since its impression is made upon a myriad different minds and must in each call forth some answering response, and it is just such an opportunity as this which is presented in the Field Museum.

In his appreciation of this opportunity, Mr. Hering has created a distinguished group of sculptures of an inspiration sustained not only in the broad, general conception of the work, but throughout the infinite variety of the detail, a group which can only be recognized as one of the most important contributions to American sculpture.

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VOL. V, No. 5.

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BOARD OF TRUSTEES

FOR THE YEAR 1919.



CHICAGO, U. S. A.

January, 1920.

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CONTENTS.

	PAGE
Board of Trustees	300
Officers and Committees	301
Staff of the Museum	302
Report of the Director	303
Maintenance	306
Publications	306
Library	307
Cataloguing, Inventorying, and Labeling	308
Accessions	310
Expeditions and Field Work	318
Installation and Permanent Improvement	319
The N. W. Harris Public School Extension	328
Photography and Illustration	330
Printing	330
Financial Statement	331
Attendance and Receipts	333
Accessions	334
Department of Anthropology	334
Department of Botany	335
Department of Geology	337
Department of Zoölogy	338
Section of Photography	340
The Library	340
Articles of Incorporation	354
Amended By-Laws	356
List of Honorary Members and Patrons	362
List of Corporate Members	363
List of Life Members	364
List of Annual Members	366

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A. A. SPRAGUE.

FREDERICK J. V. SKIFF.

AUDITING COMMITTEE.

GEORGE MANIERRE.

ARTHUR B. JONES.

ADMINISTRATION COMMITTEE.

EDWARD E. AYER.

WATSON F. BLAIR.

FRANK W. GUNSAULUS.

GEORGE MANIERRE.

CHAUNCEY KEEP.

PENSION COMMITTEE.

ARTHUR B. JONES.

A. A. SPRAGUE.

FREDERICK J. V. SKIFF.

STAFF OF THE MUSEUM.

DIRECTOR.

FREDERICK J. V. SKIFF.

DEPARTMENT OF ANTHROPOLOGY.

BERTHOLD LAUFER, *Curator.*

CHARLES L. OWEN, *Assistant Curator Division of Archæology.*

FAY COOPER COLE, *Assistant Curator Physical Anthropology
and Malayan Ethnology.*

ALBERT B. LEWIS, *Assistant Curator of African and Melanesian
Ethnology.*

J. ALDEN MASON, *Assistant Curator of Mexican and South
American Archæology.*

HELEN C. GUNSAULUS, *Assistant Curator of Japanese
Ethnology.*

DEPARTMENT OF BOTANY.

CHARLES F. MILLSPAUGH, *Curator.*

B. E. DAHLGREN, *Assistant Curator Economic Botany.*

EDWARD T. HARPER, *Assistant Curator of Cryptogamic Botany.*

DEPARTMENT OF GEOLOGY.

OLIVER C. FARRINGTON, *Curator.* H. W. NICHOLS, *Assistant Curator.*

ELMER S. RIGGS, *Assistant Curator of Paleontology.*

DEPARTMENT OF ZOÖLOGY.

CHARLES B. CORY, *Curator.*

WILFRED H. OSGOOD, *Assistant Curator of Mammalogy and Ornithology.*

WILLIAM J. GERHARD, *Assistant Curator Division of Entomology.*

EDMOND N. GUERET, *Assistant Curator Division of Osteology.*

R. MAGOON BARNES, *Assistant Curator Division of Oölogy.*

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION.

S. C. SIMMS, *Curator.*

RECORDER.

D. C. DAVIES.

ASSISTANT RECORDER.

BENJ. BRIDGE.

THE LIBRARY.

ELSIE LIPPINCOTT, *Librarian.*

EMILY M. WILCOXSON, *Assistant Librarian.*

January 1, 1920.

ANNUAL REPORT OF THE DIRECTOR.

1919

To the Trustees of Field Museum of Natural History:

I have the honor to present a report of the operations of the Museum for the year ending December 31, 1919.

Uncertainty as to the date of removal to the new Museum building in Grant Park was as far as humanly possible dissipated at the close of the year, by the joint opinion of all parties and agencies concerned in the big task that this movement could safely begin the latter part of April, and it is upon this understanding that the personnel of the Museum will enter the new year; with over ninety per cent of the material ready for transportation and the building practically completed. All the contracts incident to this most important work will have been closed during January and all arrangements perfected for the building of spur tracks from the Illinois Central Railroad to platforms to be constructed near the openings in each building provided for forwarding and receiving. It is now estimated that the transfer of all properties may be accomplished within sixty days and that before the end of 1920 sufficient installation will have been completed to justify admission of the public to at least certain sections of the new building.

After rather protracted negotiations, but without any serious dispute, the contract with the Government permitting the hospitalization of the new Museum building was cancelled and the Museum accepted from the Government an allowance as full satisfaction of the expenses incurred and additional cost imposed during the time the Government controlled building operations.

Mr. James Simpson, Vice-President of Marshall Field & Company and for many years the confidential associate of Marshall Field, donated to the Museum such a sum of money as would be required to construct the large assembly hall, or auditorium, in the new building. This gift was accepted with expressions which the circumstance would naturally invite. Subsequently, it was determined to dedicate this auditorium as "James Simpson Theatre of Field Museum of Natural History." It will accommodate one thousand people. A stage and its ordinary accompaniments, foot lights, orchestra stall, etc., are included in the

plan. The interior treatment of the theatre will be in harmony with that of the main building and it will be equipped with every modern appliance for facility and comfort.

The Trustees have named the large hall along the east side of the Department of Botany on the second floor of the new building in honor of Mrs. Stanley Field. In this hall will be installed the collections in plant reproduction, for which expensive and elaborate work under the direction of the Department of Botany, Mrs. Field has provided the essential funds. It will be known as Sara C. Field Hall.

The plaster model of the new Museum building, which has been on exhibition in the Rotunda of the present building for several years, by vote of the Board of Trustees has been presented to the Architectural School of Armour Institute.

The Woman's Temple building, located at the corner of La Salle and Adams streets, mortgage upon which was given to the Museum by Marshall Field before his death and which mortgage was foreclosed after years of default, was sold to the State Bank of Chicago during the month of May, and the proceeds added to the capital of the General Fund.

In order to increase the income to a sum demanded by the extended service of the public schools by The N. W. Harris Public School Extension of Field Museum of Natural History, the heirs of the late Norman W. Harris, who provided the foundation for the Extension, have donated to the Museum the sum of \$25,000.00.

Trustee William Wrigley, Jr., having granted an exclusive privilege to the Museum to survey, excavate and collect archaeological material on Catalina Island, the Museum, by permission of the grantor, entered in an arrangement with the Museum of the American Indian of New York City to prosecute scientific investigation on this island for the period of two years. An expedition for this purpose is to be commissioned by Mr. George G. Heye, President of the Museum of the American Indian, early in 1920.

A gift of unusual interest came from President Field; a Chinese cloisonné figure, perfect in execution and rich in color, about twenty-two inches high, representing a Grand Lama of the Buddhist Church of Tibet. Upon comparison with other images, the statue is identified as a portrayal of Pal-dan-ye-she, a church dignitary only next in rank to the Dalai Lama of Lhasa, and known as the Tashi Lama. Extended reference to this donation is made elsewhere.

An important accession during the year consisted of the private botanical collection of Mr. Edward T. Harper of Geneseo, Illinois. This collection is composed of 10,000 fungi, 10,000 flowering plants, over 800 titles of books and pamphlets and approximately 1,500 photograph

negatives. Mr. Harper desiring to continue his collecting and notes on this order of plants will remain in charge of this section in the Department of Botany, as Assistant Curator of Cryptogamic Botany. The transfer of the material will take place when the section which it is to occupy in the new building is ready for its reception.

Mr. George Langford of Joliet, Illinois, presented to the Museum his unusual collection of remains of mastodons obtained in Minooka, Illinois, and also specimens of mosasaurs from Kansas. The mastodon material includes remains of eight individuals. The expenses incurred by Mr. Langford in connection with this transfer were borne by Trustee Chauncey Keep.

The publication of "Sino-Iranica" by Dr. Berthold Laufer, Curator of the Department of Anthropology, funds for which were provided by Mrs. T. B. Blackstone and Mr. Charles R. Crane, has been completed and distributed.

Mr. William Wrigley, Jr. has presented to the Museum a notable collection of pre-Colombian gold ornaments from the United States of Colombia, excavated near the river Neshi, which is described in detail elsewhere. The gift comprises a brilliant and intrinsically valuable contribution to the rare material in the Museum.

An advance in salaries and the allowance of generous bonuses for the year 1919, recognized the increased cost of subsistence as well as the protracted and commendable services of the recipients.

Mr. Stanley Field was unanimously elected by the Board of Trustees an Honorary Member of the Institution, in recognition of the eminent service he has rendered to science.

Mr. John P. Wilson was elected a Patron of the Museum, in recognition of the eminent service he has rendered to the Institution.

The continued efforts of President Field to increase the Life Memberships of the Institution resulted in the election of the following during the year: Mark Morton, Silas H. Strawn, Edward S. Moore, Leroy A. Goddard, Robert H. Allerton, John V. Farwell, Ward W. Willits, Frederic McLaughlin, John Borden, Lafayette McWilliams, Joy Morton, Solomon A. Smith, Charles P. Wheeler, Frederick T. Haskell, Thomas E. Wilson, George E. Scott, Frank Hibbard, Frank O. Lowden, William O. Goodman, C. K. G. Billings, John W. Scott, G. F. Swift, Jr., A. G. Becker, Garrard B. Winston, Henry C. Lytton, William A. Pinkerton, David B. Jones, A. W. Goodrich, Thomas D. Jones, James C. Hutchins, John B. Drake, L. J. Hopkins, John B. Lord, Thomas W. Hinde, Adolph Nathan, Wallace C. Winter.

The death of Harlow N. Higinbotham, as a result of an automobile accident in New York City on April 18, 1919, has to be announced.

Mr. Higinbotham took a very active interest as President of the Columbian Exposition in securing for the Museum a vast quantity of material, which was the nucleus of the collections, and as Chairman of the Executive Committee of the Museum for fifteen years and as President of the Museum for twelve years, assisted effectively in the up-building of the Institution. He presented the collection of Gems and Jewels now installed in a hall named in his honor and gave other interesting but less costly material to the Museum. Mr. Higinbotham was succeeded as President by the incumbent of that office in 1909.

At the last regular meeting of the year, the Trustees were informed that the Founder of the Stanley Field Museum Employees' Pension Fund had suggested incorporating a system of life insurance in the benefits of the pension plan and that the Committee in charge of pensions had worked out a scheme which commended itself to Mr. Field. The Board of Trustees gave its approval, and it is probable that by the first of February, 1920, life insurance will be written upon the employes of the Institution.

MAINTENANCE.—The budget authorized by the Board of Trustees provided the sum of \$156,380.00 for the maintenance of the Museum for the year. The amount expended was \$132,252.00, which sum includes all expenditures made for preparing the entire contents of the Museum for removal to the new building. A satisfactory margin of \$24,130.00 appears as a result of the operations during the year. A further sum of \$9,039.00 was expended by special order of the Board of Trustees for collections, bonuses referred to elsewhere, and expeditions, bringing the total approximately to \$141,300.00.

PUBLICATIONS.—During the year four publications were issued, comprising parts of four volumes, details of which follow:

Pub. 201.—Anthropological Series, Vol. XV, No. 3. Sino-Iranica. Chinese Contributions to the History of Civilization in Ancient Iran with special reference to the History of Cultivated Plants and Products. By Berthold Laufer. 1919. 446 pages. Edition 1,800.

Pub. 202.—Report Series, Vol. V, No. 4. Annual Report of the Director for the Year 1918. January 1919. 69 pages, 26 halftones. Edition 1,950.

Pub. 203.—Zoölogical Series, Vol. XIII, Part II, No. 2. Catalogue of the Birds of the Americas. By Charles B. Cory. 293 pages. 1 colored plate. December 1919. Edition 1,200.

Pub. 204.—Botanical Series, Vol. IV, No. 2. Revision of the North American species of *Xanthium*. By Charles F. Millspaugh and E. E. Sherff. April 1919. 41 pages. 7 halftones. Edition 1,000.

In addition to the publications distributed for exchange purposes, two hundred and sixty-eight have been sold to various individuals who were not in a position to offer equivalent literature as an exchange.

THE LIBRARY.—There have been received by gift, exchange and purchase 1,716 books and pamphlets, an increase over last year's receipts. The library contains 72,736 bound and unbound books and pamphlets. The following list shows the number of titles in each Department:

General Library	45,792
Department of Anthropology	3,698
Department of Botany	7,640
Department of Geology	10,675
Department of Zoölogy	4,931

No especial event affecting the welfare of the library has occurred during the year; the endeavor has been to round out the work along the usual lines. With the activities of the curatorial staff largely engaged in preparations for moving to the new building, their requests for books were comparatively few during the first half of the year. With the cessation of that work and time again devoted to research their requests were renewed for books necessary for the study of material for installation purposes. For immediate use forty-three works were purchased. An important gift was received from Dr. Frank W. Gunsaulus of a rare and beautifully bound copy of Autograph Letters of Charles Darwin, written to J. Jenner Weir during the year 1868; also autographed copies by Louis Agassiz. These are the initial contributions to a very interesting collection to be known as, Gunsaulus collection of personalia and souvenirs of eminent naturalists. Early in the year the first volume of The Monograph of the Pheasants, by William Beebe, was published by the New York Zoölogical Society; a beautifully illustrated work of these gorgeous birds in their native haunts, to be complete in four volumes. When the attention of Mr. Edward E. Ayer was called to the work he immediately subscribed to the set for the Ayer Ornithological Library of the Museum. Mr. Ayer has also presented copies of Seth-Smith's Handbook of the Imported Species (parakeets), and Whitaker's Birds of Tunisia. A number of desirable and valuable publications were received from contemporary institutions, both domestic and foreign, in exchange for the publications of the Museum. The number was especially noticeable because of the enormously enhanced cost of book-production. The Museum was most fortunate in receiving

from the Museum of Comparative Zoölogy, Harvard College, an almost complete set of its *Memoirs*, thirty-four volumes, covering the years 1864 to 1916. From the Sullivant Moss Society, New York City, was received a set to date of its publication, *The Bryologist*, in sixteen volumes. One hundred and seventeen books were bound during the year. While it ordinarily is unwise to keep separate numbers of serials and periodicals in an unbound condition, the prices of all materials used in binding having increased nearly one hundred per cent in the past few years, binding at present prices seems prohibitive. There were written and filed in the catalogues 18,054 cards. The regular monthly installment of author cards was received from the John Crerar Library. The Museum is unusually indebted this year to large libraries both in and out of Chicago for the loan of books that were necessary in the performance of its work; these courtesies are gratefully acknowledged, especially to the Library of Congress, the Library of the Department of Agriculture, the Surgeon General's Library, the John Crerar Library and the Library of the University of Chicago. A list of all accessions received by the Library during the year will be found elsewhere in this report.

DEPARTMENTAL CATALOGUING, INVENTORYING, AND LABELING.—During the year, in the Department of Anthropology, the work of cataloguing has been carried on as new accessions were acquired, but this task was naturally eclipsed by the necessary preparations for moving collections into the new building. The total number of catalogue cards prepared amounts to 577. These cards were distributed over the single divisions as follows: China, Japan, and India 117; Melanesian Ethnology 325; South-West, Mexican, and South American Archæology 125; and North American Ethnology 10. All these cards have been entered in the inventory books of the Department, which now number thirty-eight. The number of annual accessions amounts to twenty-five, nineteen of which have been entered. The total number of catalogue cards entered from the opening of the first volume amounts to 153,548. The photographer made 297 negatives and two enlargements, and supplied 370 prints to the Department, 160 of these referring to Japanese sword-guards. Twenty-four prints were added to the photographic albums kept in the Department. The printer delivered to the Department a total of 5,419 labels for use in exhibition cases. These labels are distributed as follows: New Guinea 1,939; Eskimo and Northwest Coast 2,622; Mexico 841; and China 17. The printer further supplied the Department with 700 catalogue cards. 373 new label cards were added to the label file.

In the Department of Botany the entries made number 4,586,

bringing the total entries to 482,076. The card indexes have been augmented as follows:

	No. of Cards	
	Augmented 1919	Total
Index of Botanical Species	4,383	152,033
Index to Common Names of Plants	349	20,299
Index to Yucatan Plants . . . . .	.....	6,362
Index to Euphorbiaceae . . . . .	.....	4,225
Index to Department Labels . . . . .	.....	3,100
Index to Geographic Localities	6	2,756
Index to Collectors and Collections	42	9,892
Index to Botanical Titles . . . . .	.....	1,500
Index to Department Library . . . . .	.....	8,800
Index to Illinois Flora . . . . .	.....	900
Index to Hand Specimens of Woods . . . . .	.....	800
Index to Installed Cases . . . . .	.....	595
Index to Photographs . . . . .	.....	600
	<hr/> 4,780	<hr/> 211,862

In the Department of Geology all accessions have been catalogued in full as received, with the exception of the Langford collection, which, as it was already packed on its arrival at the Museum, it seemed inadvisable to unpack for final cataloguing until space should be available for its installation. The entries made during the year number 591. These were chiefly of specimens of the Klechner and Dahlgren collections. A few labels have been made to fill gaps in the series of exhibition labels.

Owing to the inaccessibility of most of the study collections in the Department of Zoology, due to the preparation for removal to the new building, comparatively little cataloguing and labelling has been possible. The total entries made during the year number 553. There have been added 153 new entries in the Division of Ichthyology and 87 in Herpetology. Data for these entries have been added to the card catalogue and the specimens have been duly labelled and tin-tagged. Labels have also been prepared for a considerable portion of the exhibition collection in Ichthyology. Only 2 entries were made during the year in the Division of Osteology, an African elephant skull and a white rhinoceros skull received in exchange from the American Museum of Natural History. These were catalogued and index cards written to complete the record. In the Division of Mammalogy 6 catalogue entries were made and in the Division of Ornithology 305. The total entries to date number 101,014. The cards written during the year number 193, making a total of 34,406.

The following table shows the work performed on catalogues and the inventorying accomplished:

310 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

	No. of Record Books	Total No. of Entries to Dec. 31, 1919	Entries During 1919	Total No. of Cards Written
Department of Anthropology .	38	153,548	577	153,688
Department of Botany . . .	58	482,076	4,586	87,175
Department of Geology . . .	22	141,020	591	8,018
Department of Zoology . . .	40	101,014	554	34,406
The Library	14	111,076	2,716	277,026
Section of Photography . . .	20	120,844	1,706	.....

ACCESSIONS.—The most notable accession of the year in the Department of Anthropology is represented by the generous and memorable gift of Mr. William Wrigley, Jr., being the gold treasure excavated from a mound on the river Nechi, in the province of Antigua, Colombia, South America. This remarkable and unique collection consists of 36 pre-Columbian gold ornaments, comprising four large embossed breastplates of pure gold, two collars of gold foil, two rectangular plates, two fragmentary sheets of gold foil, one necklace of gold beads, four pairs of gold ear-rings, three cast figures of a bird, and eighteen miscellaneous ornaments. The four breastplates were beaten out on stone moulds carved in relief with the design required; they were apparently interred with women of high social standing, who were buried adorned with jewelry and ornaments they had most prized during their lifetime. Two of these plates are selected for illustration in this Report; also one of the birds and three of the ear-rings, which are exquisite both as to artistic quality of design and perfection of technique. The gold collection has been installed in the Gem Room, and is accompanied by a general label setting forth its significance. It has attracted a great deal of attention and given rise to many favorable comments, both in the press and on the part of archaeologists. Mr. Stanley Field made a notable gift to the Department by adding to its Tibetan collection a fine portrait-statue, 22 inches high, wrought in cloisonné enamel and representing a Grand Lama of the Buddhist Church of Tibet. Comparison with other known images permits the establishment of the identity of this personage. In all probability it is a portrayal of Pal-dan-ye-she, a church dignitary only next in rank to the Dalai Lama of Lhasa and having his seat in Tashilhunpo in central Tibet. He is known as the Tashi Lama, being famous for having been the first Tibetan, who in 1774 entered into negotiations with the Anglo-Indian Government through George Bogle, an emissary of Warren Hastings, Governor General of India. In his diary Bogle characterizes him thus: "His disposition is open, candid, and generous. He is extremely merry and entertaining in conversation, and tells a pleasant story with a great deal of humor and action. I endeavored to find out in his character those defects which are inseparable from humanity, but he is so universally beloved that I had no success,

and not a man could find in his heart to speak ill of him." Subsequently, he received an invitation from the Emperor of China to come to Peking, where he spent a year in one of the Lama temples, highly honored by the whole country. In 1780 he died a mysterious death, at the age of forty-two, officially of small-pox, but more probably of poison administered by imperial jealousy and disapproval of his intercourse with the English. Technically his image is a masterpiece and the finest specimen of cloisonné in the Institution. The background is yellow to indicate the robe of imperial yellow silk conferred upon the hierarch by the Emperor. The designs woven in this robe are all skillfully brought out by the process of inlaid enamels and represent the eight Buddhistic emblems of happy augury,—canopy, wheel of the law, conch, umbrella, lotus, vase, knotted cords, and double fish. The mitre is decorated with two red dragons soaring in clouds. The pedestal is ornamented in front with two lions in green, playing with a ball, and two dragons pursuing the flamed pearl; two elephants bearing tribute-gifts are shown on the sides, and three lotus-blossoms decorate the back of the base. Face and hands are gilt. Both composition and coloration are dignified and harmonious, and the statue conveys an excellent characterization of this historically interesting Grand Lama. Mr. Edward E. Ayer remembered the Department during the winter spent on the Pacific Coast, and a collection of six excellent knives, five from the Mohammedan Moro of the Philippines and one of Borneo manufacture, probably from the Kenyah or Kayan, is due to his generosity. The Borneo blade is beautifully chased and inlaid with brass, while the ivory handle is decorated with elaborate carvings. Three of the Philippine knives have wavy blades, and two are of the straight blade variety. In the latter group is a specimen of particular interest, because it is inlaid with a conventionalized floral pattern next to the hilt. A feather head-band used in the white-deer dance of the Indians of California, a good stone mortar with pestle, and a metate with muller, used by a child, were likewise presented by Mr. Ayer. His further contribution during the year is a Sioux woman's beaded dress of buckskin, taken by the late Lieut. Frederick Schwatka of the 3rd Cavalry from the village of the hostile Sioux chief, American Horse. This sleeveless, one-piece dress is probably unique owing to the large quantity of pink beads displayed over the back and breast extending onto the arms. This feature, together with its extraordinary state of preservation, makes it a museum specimen of the first order and now rarely encountered. A very unusual and beautiful ancient slate carving of the Haida on Queen Charlotte Islands, B. C., likewise obtained by Lieut. Schwatka at Victoria, B. C., in 1891, was presented by Mr. Martin A. Ryerson. It is a master-

piece of primitive sculpture. During the year Mr. Homer E. Sargent made two notable additions to his previous extensive contribution of 1917. These comprise two Pueblo squaw dresses secured about thirty years ago, three excellent Navaho blankets of native wool and dyes, and a Salish blanket of mountain-sheep wool, all of which strengthen the former gift. The last-named blanket is illustrated in this Report. To the continued interest of Dr. Frank W. Gunsaulus the Museum is further indebted for four remarkable additions,—first, a very important and most interesting collection coming from the native tribes of Formosa and brought to this country by S. Ishii, who for fifteen years has been chief of the Ethnological Survey of the Japanese Government on that island. It is well known that the task of the traveler and collector is fraught there with difficulties, especially in view of the fact that the wild tribes are secluded in the high mountainous regions. There are in this collection two complete costumes, one worn by a warrior chief on head-hunting expeditions, and a woman's dress. Other prominent features are three fine necklaces of agate and colored Venetian beads, which are highly prized by the natives and used for bartering purposes; several valuable wood carvings decorated with artistic designs; large pieces of textiles; a sword with a wooden scabbard carved with interesting ornaments; the model of a dugout, and several carved tobacco pipes and musical instruments. In view of the close affinity of the culture of the Formosan tribes with that of the Philippines, especially northern Luzon, which, for instance, is brought out by the artistic decorations of these specimens, this new material is of considerable scientific interest. A number of interesting photographs and two albums illustrating scenes of native life are added to the collection, which, it is hoped, will be placed on exhibition in the new building and act as a stimulus for future research in Formosa. Dr. Gunsaulus likewise presented a fine decorated metal shield from India and a celadon flower-vase in the shape of an elephant. Four glazed, ornamented porcelain tiles from Persia, due to his generosity, constitute a good beginning for a Persian collection. Miss Helen C. Gunsaulus donated a Japanese dagger with decorated sheath and hilt. Mrs. Henry J. Patten of Chicago presented an extraordinary ancient feather blanket from Rotorua, New Zealand, which was formerly the property of a Maori chief. A collection of 33 specimens from China was received from Mrs. Morgan S. Woodward of Chicago, being collected by herself at Peking in 1900, after going through the siege of the British Legation by the Boxer rebels. Among these are some trophies captured by American soldiers from the Boxers, the most curious object being a large jingal, about sixty pounds in weight, and inscribed in Chinese as hav-

ing been made in 1896 in the Arsenal of Tientsin; such jingals were carried by two soldiers on their shoulders and fired by a third man standing behind. Mr. G. L. Fitz-William, chemical and mining engineer of Hammond, Indiana, presented the Museum with an important ethnographical collection from the San Blas Indians, whom he had visited and studied. At the donor's request, this collection is to be named, in honor of his son, the "William Fitz-William Collection." The material is an excellent and representative collection from a very interesting tribe on the Isthmus of Panama. While not far removed from contact with civilization, this people preserves its aboriginality and particularly its purity of blood tenaciously. While they have been much brought into the light of publicity of late, the San Blas are seldom visited, and their specimens are rarely seen in museums. The most interesting part of the collection consists of women's garments, which are composed of many layers of bright colored cloths cut out in characteristic designs. Mr. G. F. Vivian contributed seven bows and thirty-six arrows from the Arawak of British Guiana, South America, collected by Dr. Geo. D. B. Dods; this is good and representative material, and there are several new types of arrows not heretofore in the Museum collection. Assistant Curator Mason presented eighteen ethnological and archaeological objects from the Papago in Arizona, where he spent several weeks in the beginning of the year under a special leave of absence granted by the Institution. Mr. Joseph R. Morris of Deerfield, Illinois, donated twenty-three objects relating to Indian ethnology, collected at Fort Peck, Montana, in 1876. Among the prominent specimens in the lot are two choice blanket stripes, a buckskin gun-case, two splendid pouches, four knife-cases, and a netted wheel. Mr. Alfred R. Brown, Director of Education, Tonga, South Pacific, from whom the Museum purchased an Andaman Island collection in 1910, presented this year a small collection from the same group, which, while adding nothing new to the material on exhibition in the Museum, is of considerable scientific value. The technical culture of the aborigines of the Andaman Islands is not very rich, and at best yields a few weapons—chiefly bows and arrows,—some basketry, crude pottery, and scanty garments which are decorative and commemorative rather than for protection. All these are represented in this collection, and in addition a few modern imitations of the ancient bone-tipped arrows used in hunting and warfare. Included in the gift are two wood-carved images from the Nicobar Islands. One of these, the figure of a woman, is an excellent piece of native carving, and is a distinct addition to the exhibition collections. Such figures are believed to drive sickness and evil influences away from a house or village. While in Manokwari, Dutch New Guinea, in

December, 1912, Assistant Curator Lewis left a small sum in care of F. J. F. van Hasselt, a missionary stationed there, for the purpose of obtaining specimens from the north coast of Dutch New Guinea. This missionary was in the habit of taking trips every year to various parts of the coast, and stated that in the course of two or three years he could easily make a fairly representative collection. Owing to long delays in shipping caused by war conditions, the material arrived here only in July of this year. The collection comprises over three hundred specimens from various places along the north coast of Dutch New Guinea, including some fine large wooden figures, house ornaments, and about twenty-five ancestral images, called *korwar*. These are rare and valuable. Weapons, implements, household utensils, clothing and ornaments are all well represented. This part of New Guinea has been more or less visited by Europeans for many years, and very little of original native workmanship is at present to be had. The influx of the numerous Chinese and Malays settled along the coast has also tended to destroy or modify the native industries. Hence, but little from this region can be obtained, and that often betrays foreign influence.

The Department of Botany received the following important additions to its herbarium during the year: From the Philippine Bureau of Sciences 646 plants of the Philippines; Miss Anna King 300 specimens from Illinois; Paul C. Standley 285 Mexican plants of Arséne and Nicolas; B. F. Bush 70 plants of Missouri; Geological Survey of Canada 248 Canadian plants; Mrs. Stanley Field Plant Reproduction Section 102 plants of Georgia and Florida; Bernice Pauhai Bishop Museum 262 Hawaiian plants; The New York Botanical Garden 507 West Indian plants; C. F. Millsbaugh 65 Wisconsin plants; H. M. Denslow 73 New England plants, and F. E. McDonald 63 plants of Illinois. The regional distribution of fully organized material to the herbarium in 1919 is shown in the following tabulation:

LOCALITY.	Added to Herbarium 1919	Total now in Herbarium
NORTH AMERICA (in general)	40	123
Alaska	4	1,350
Canada	4	909
Alberta	122	1,273
Athabasca	2	3
British America	3	3
British Columbia	33	1,486
Queen Charlotte Island	3	101
Vancouver Island	48	758
Herschen Island	1	1
Mackenzie	1	7
Nova Scotia	8	427

LOCALITY.	Added to Herbarium 1919	Total now in Herbarium
Ontario	39	1,709
Quebec	18	1,146
United States:		
Alabama	34	1,502
California	544	26,127
Colorado	22	12,607
Carolina (South)	5	1,103
Dakota (North)	1	651
Florida	74	20,405
Georgia	5	4,000
Illinois	494	28,462
Kansas	5	551
Louisiana	40	1,338
Maine	12	1,657
Maryland	7	1,373
Massachusetts	7	5,357
Michigan	1	3,913
Missouri	86	3,972
Nebraska	1	496
Nevada	13	1,308
New Hampshire	19	1,591
New Jersey	42	3,079
New Mexico	127	3,849
New York	79	7,550
Ohio	6	2,076
Pennsylvania	8	10,176
Tennessee	2	1,372
Texas	4	9,892
Utah	732	4,033
Vermont	19	3,623
Virginia	2	4,845
Wisconsin	65	5,072
Bahama Islands:		
New Providence	11	2,439
West Indies:		
Cuba	12	10,969
Grenada	5	819
Jamaica	1	7,695
Porto Rico	1	4,732
St. Kitts	1	14
Trinidad	1	495
Mexico	291	31,605
Yucatan	2	6,761
CENTRAL AMERICA:		
Costa Rica	17	629
Guatemala	1	3,084
Honduras	1	273

316 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

LOCALITY.	Added to Herbarium 1919	Total now in Herbarium
SOUTH AMERICA:		
Brazil	5	596
Chile	2	253
Colombia	507	2,938
Ecuador	2	852
Hermite Island	2	2
Venezuela	1	708
EUROPE (in general)	1	114
Austria	52	7,796
France	10	8,382
Germany	21	8,717
Great Britain (in general)	7	1,433
England	97	2,556
Ireland	1	172
Isle of Man	1	1
Scotland	35	587
Wales	16	99
Norway	5	1,213
Sardinia	1	20
Spain	1	635
Sweden	2	9,721
Switzerland	79	3,717
ASIA:		
India	15	1,081
Ceylon	1	69
Palestine	1	613
Philippines	1,791	12,444
AFRICA:		
Abyssinia	5	226
Bourbon Island	1	1
Sierra Leone	1	13
OCEANICA:		
Auckland	1	1
Borneo (British)	2	10
New Zealand	5	1,533
Sandwich Islands (in general)	26	26
Kauai	44	493
Lauai	28	28
Mauai	22	23
Molokai	22	22
Oahu	120	613
Samoa	4	67
Horticultural	68	3,349
Illustrations mounted as Herbarium sheets	40	2,276

The most important accession received by the Department of Geology during the year was a large collection of vertebrate fossils presented by Mr. George Langford. This collection represents the results of many years of labor on the part of Mr. Langford, and is valuable, not

only for the amount of the material contained in it, but also for its well-prepared condition. The collection consists of two principal series, one chiefly of remains of mastodons obtained in Minooka, Illinois, and the other of specimens of mosasaurs from Kansas. The mastodon material includes remains of eight individuals, which range in age from a young calf to an adult. Of one large, adult male, portions of the skull, complete lower jaws, many limb bones, vertebrae, ribs and foot bones are preserved, as well as a tusk nine feet in length, probably the largest tusk of an animal of this species ever found. The other individuals of this series are represented by various skeletal parts, an especially important feature being that the entire tooth development of the mastodon is shown by specimens ranging from the first milk teeth to the ponderous, grinding molars of the male adult. Of the collection illustrating mosasaurs, the most important feature is two nearly perfect skulls, one two feet, the other eighteen inches in length which have been carefully excavated from their matrix and mounted free. These display in remarkable completeness the characters of the heads of these extinct "sea serpents." Some vertebrae are also associated with these skulls. A large jaw of a Columbian mammoth and a head of the fossil fish, *Gillicus*, also are included in the collection. Three complete individuals from the meteorite fall which occurred at Cumberland Falls, Kentucky, in April of this year, have been added to the meteorite collection, one being the gift of Mr. W. R. Jillson. The meteorites of this fall are of peculiar interest on account of their unique composition and structure. Of the meteorites of Richardton, North Dakota, which fell June 30, 1918, four individuals, aggregating about ten pounds in weight, were obtained, partly by purchase and partly by exchange with Professor T. T. Quirke. By exchange with the British Museum, representative specimens of the Baroti, Kuttipuram and Warbreccan meteorites were secured. A specimen of amethyst showing remarkable distribution of color, and two valuable crystals of scheelite were presented by Mr. W. J. Chalmers as additions to the Chalmers crystal collection. Several specimens of high-grade gold ore from Cripple Creek, Colorado, showing considerable free gold, were presented with other material by Mrs. G. Mace, and a collection containing, among other specimens, several minerals used in optical work was received by gift from Dr. Geo. M. Gill. By exchange with Prof. M. E. Kleckner, about one hundred specimens of crystallized celestite, fluorite, calcite and sphalerite from localities in Ohio and Michigan and of forms previously unrepresented in the Museum were obtained. Six specimens of typical Barbadoes earth and one of globigerina marl from the Barbadoes Islands were obtained by exchange with the University of Iowa. These illustrate deposits of

deep-sea origin which also have industrial uses. Dr. B. E. Dahlgren during his stay in Florida and other southern states collected for the department about one hundred and thirty geological specimens chiefly from Florida, but also from localities in Kentucky and Tennessee. These included sixteen specimens of varieties of soils, marls, mucks and sands characteristic of certain portions of Florida; several large specimens of coquina, illustrating the varieties and forms which characterize the structure of this peculiar aggregate, and ninety specimens of invertebrate fossils, partly from recent formations in Florida and partly from formations of Chester age in Kentucky and Tennessee.

The principal accession during the year in the Division of Mammalogy was secured by gift from Col. Dale Bumstead of Oak Park. It consists of three well-prepared skins and skulls of the Lower California mountain sheep and several skulls of mule deer. The Division of Ornithology received 217 bird skins, 67 of which represent a part of the Museum's share from the Collins-Day expedition. An African elephant skull and a white rhinoceros skull were received as an exchange from the American Museum of Natural History. Among the additions made to the shell collection is a gift from Mr. Giuseppe Despott of the Natural History Museum in Malta, which consists of 433 named and well labeled specimens from the Maltese Islands. The fact that the Museum had few shells from these islands adds to the value of this acquisition. There were 949 shells and 10 crustaceans added to the Department during the year. A total of 63 specimens of insects was received, of which number 57 were a gift and 6 an exchange. The accessions in the Division of Ichthyology and Herpetology consisted chiefly of gifts, totaling 284 specimens. The most important of these is a collection of thirty amphibians and reptiles from the Mississippi River Valley, presented by Mr. J. W. Mackelden of St. Louis. Mr. Leon L. Pray, Mr. William J. Gerhard, Mr. Herbert L. Stoddard, and others, added a number of desiderata to the collection of Illinois and Indiana snakes. Mr. Stoddard also donated a collection of wall lizards, taken by him while in the service in France. Mr. J. G. Sinclair presented a few amphibians and reptiles from Arizona, Mr. M. H. Sackheim three from New Mexico, and Mr. Charles L. Hubbs several from southern California.

EXPEDITIONS AND FIELD WORK.—Finds of remains of mastodon at two localities, Monee, Illinois, and Leiter's Ford, Indiana, were investigated by Assistant Curator Riggs. The mode of the occurrence of the bones at these localities was studied, some exploration conducted at the sites and negotiations entered into with the owners of the specimens which may result in securing desirable material later. As a result of a trip to Porcupine, Ontario, Canada, gold-mining district, a number of typical

ores and rocks of the region were secured by Assistant Curator Nichols. Assistant Curator Hubbs carried on some local field work for the Department of Zoölogy, obtaining a number of specimens for mounting in small groups, as well as a series of certain species for the study collection.

INSTALLATION, REARRANGEMENT, PERMANENT IMPROVEMENT—Most of the time of the members of the staff of the Department of Anthropology was consumed by the complex preparations in connection with the moving operations, chiefly assembling, sorting, and arranging material for packing, dismantling and charting cases, preparing and labeling material for future installation in the new building, and keeping exact records of the location of packed material. As a sequel to this labor, all plans previously prepared for the halls of the new building were subjected to a thorough revision and to numerous modifications. Frequent visits were made to the new building by members of the staff, and the study of actual conditions permitted the visualizing of the situation more correctly than was possible from the floor plans. The total result of this year's packing in the Department of Anthropology may be summed up in dry figures as follows: 615 exhibition cases, 320 boxes, 457 crates, 76 cartons, 80 bundles or packages in burlap, and 27 kegs and barrels. All these items have been properly labeled and numbered. The process of packing may be regarded as practically completed. There were prepared for installation in the new building 101 cases, covering the Eskimo and the tribes of the northwest Coast of America, the Coast and Interior Salish, and the Plateau Indians. This required the complete or partial dismantling of 123 cases formerly on exhibition. In conformity with the new principles of installation, all duplicate material was eliminated, which has resulted in a net saving of twenty-two cases. In the new arrangement, also a considerable quantity of material formerly in storage is placed on exhibition, while many large specimens which have stood in the open, or have been attached to the walls, are now safely sheltered behind glass. It has been the endeavor to arrange the material in geographical and cultural sequence using an adequate number of specimens to illustrate the every-day, esthetic, and religious life of the people. In the Divisions of Archaeology and Ethnology twenty-two cases were arranged for future installation in the new building. These refer to the archaeology of Colombia and Mexico and to the ethnology of the Upper Amazon, Central Brazil and Paraguay. In most instances, all available material was selected for exhibition, but surplus and duplicate objects have been relegated to study and exchange collections. Special care has been taken of the group cases. A detailed plan of each has been made to be utilized in the new building for the reconstruction of the groups. Reproductions

of three Hopi altar-mosaics of the Powamu ceremony in papier-maché and in their correct colors have been made, which may eventually replace the present mosaics of sand. In view of the importance of the packing operations, the repair section of the Department was temporarily closed until October 1st. Careful attention was devoted to the treatment of the Egyptian sculptural stones in the Department, which was carried on under the supervision of the Curator of Geology. The results thus far obtained are very satisfactory. Seventy-five cases were cleaned and poisoned during the year. The appointment of Miss Helen C. Gunsaulus as Assistant Curator of Japanese Ethnology, permits the systematic and intelligent study and disposition of considerable material in this division already in the possession of the Department of Anthropology. Miss Gunsaulus brings to the work she has undertaken, studious habit and special training, with enthusiasm and aptness for museum practice, as the work thus far done upon the collections in this division gives evidence.

The Department of Botany installed no cases during the year, the time of the staff being expended in packing for removal to the new building. All the exhibition cases in the department were securely packed for transportation; this packing being so done that the contents of each case may be returned thereto with a minimum of time expended. Such specimens as could not be fastened securely *in situ* in the cases, were enclosed in cartons and packed in the lockers of the cases to which they pertain. The base lockers in each case were utilized for packing. In them were placed all duplicate and study specimens, each in an individual paper box or corrugated paper parcel, and all bottles enclosed in "egg-case" partitioned cartons designed to fit the bottles. Thus the specimens of each case remain with the case to which they pertain. Lockers not needed for the case contents were packed with bundles of mounted plants belonging to the herbarium collections. The exhibition cases are now all ready for removal and labeled as to the hall and spot on the floor of each hall that they are to occupy in the new building. Notwithstanding this packing, a large number of the cases are still on creditable exhibit, not materially disturbed though fully ready for transportation. In addition to the exhibition case packing, over 480 numbered boxes and crates of material have been packed for removal. In all cases a complete record has been kept of the packages and their contents. While the herbarium has not yet been disorganized, it has been made ready for packing while still referable. This and the appurtenances of the offices and laboratories can be prepared for removal promptly after transportation actually begins. The plant reproductions made in the Mrs. Stanley Field Laboratories, have been

left on exhibition in their regular places in each case. These will remain so installed until the moving force begins operations. The work of the staff of the Mrs. Stanley Field Laboratories has not been interrupted. The first four and a half months of the year were spent in Miami, Florida, where the laboratory and garden of the Plant Introduction Station of the U. S. Department of Agriculture served as headquarters and furnished facilities and accommodation. For this the Museum is indebted to Mr. David Fairchild, Agricultural Explorer in charge of the Plant Introduction Bureau of Plant Industry in Washington, and to Mr. Edward Simmonds, Superintendent of the Garden and Field Station in Miami, to the former for liberally extending to the Museum the privileges of the laboratory and station, and to the latter for innumerable acts of kindness and assistance, which made it possible to pursue the work successfully here. Thanks are also due to Mrs. Simmonds and the members of the staff of the Department of Agriculture who were stationed at the Laboratory during the past winter, viz., Dr. J. Rosenbaum, plant pathologist, Mr. Chas. E. Sando, plant physiologist, and Mr. Max Kisliuk, entomologist. The friendly and helpful attitude of all these men was a matter greatly to be appreciated in the rather narrow quarters of the laboratory. The main object of transferring the work to Florida for the winter was to secure studies and material for certain desirable plants which could be had and handled there more readily and economically than anywhere, namely: the Coconut palm, the Banana, the Pineapple, the Florida Cycad (*Zamia*), etc. The material needed for the reproduction of the specimens was secured. The most perishable parts were cast and colored and plaster moulds were made of other parts, formalin material packed and sent to the Museum, and photographs, color sketches and detail studies secured for use after return. At the same time there were found in the Plant Introduction Garden a number of interesting plants which fitted exactly into the plans for the Museum botanical exhibits. Such were, for instance, the South African *Carissa* or Natal Plum, introduced into the United States in 1901 by Mr. Fairchild and now grown as a hedge plant in many places in southern Florida. This is an excellent example of the type of plant which can scarcely be reproduced successfully except in the field, where it can be studied from day to day as the work progresses. The Silk Cotton tree, *Bombax*, with its large crimson flowers furnishes another such illustration. One of these flowers was made on the spot during the week or ten days the tree was in blossom. On the strength of this and the moulds which were made at the same time, a splendid branch of the Silk Cotton tree has been added to the exhibits. Another introduced South African plant of much interest found growing in the

subtropical garden was a scrubby tree of the Strychnine family, *Strychnos spinosus*, with large green or yellow fruit superficially resembling a grapefruit, but with a hard shell and chocolate colored pulp of pleasant taste and a clove like fragrance. A flowering and fruiting branch of this has also been added to the exhibits. One of the main lines of investigation and experimental culture pursued at the garden concerns Avocados, or Alligator Pears. Numerous varieties from diverse localities are being tried out here, with a view to the introduction into Florida of those found most suitable and valuable for general cultivation. Three thoroughly well-defined types, a Guatemalan, a Mexican and a West Indian, together with a Guatemalan-Mexican hybrid, were considered of sufficient public interest to be added to the collection. Of these reproductions were made. A number of other plants especially desired by the Department for its exhibits were collected and cast or modeled in part during the period in Miami. Such are the Seven-year Apple (*Casasia*), *Pandanus*, the Screw-pine, in flower; *Casuarina* Australian Pine or Beef-wood tree, Long staple Cotton, Water Hyacinth, etc. A pitcher-plant of the southern large-leaved, yellow flowered species, *Sarracenia flava*, was collected on the return to Chicago in the latter part of May. A single pitcher of this plant, measuring 38 inches, has since been reproduced and placed on exhibition. Some tubers and plants which were brought back in a living condition are being grown for the Museum by the Garfield Park greenhouse. Among these are a large Yam, a *Zamia*, etc. A Spider Lily (*Hymenocallis caribæa*) from Florida, grown at Garfield Park, has been reproduced as a type of Amaryllid lily. Within the last few months a Banana plant (a flowering and fruiting specimen) has been reproduced complete and has been installed temporarily on the gallery. Also a sprouted Cocoanut showing the relation of the seedling plant to the seed and old husk; a Cocoanut flower enlarged; the flowers of *Casuarina* enlarged; enlarged flowers of *Scrophularia*; enlarged flowers of *Sagittaria*; a branch of a Quince from Fort Valley, Georgia; a witches'-broom on the Sand pine; a mounted dry specimen of air plant (*Tillandsia*); a reproduction of the Natal Plum, a branch with fruits and flowers. A set of tomatoes, parasitized by the different fungi that constitute the main pests of this industry, were obtained at the Miami Laboratory, where this matter was being investigated, and were reproduced for the economic collections. At the same time pure cultures of the fungi in question were furnished by the plant-pathologist, and it is the intention of the Department to exhibit in connection with the affected fruit a model of each fungus sufficiently enlarged to make its structure plain to the naked eye. A longitudinal section of a common Fig enlarged, together with a corresponding model of the male fig, or

capri-fig, has just been completed. It shows as plainly as such models can the interesting and peculiar story of the pollination of the fig, and the intricate life-history of the minute hymenopterous insect concerned. A flowering branch of *Grevillea robusta* Australian oak, with the enlarged flowers modeled last year, completes the illustration of the Proteaceae. A summary of the results of the year's work in this Section is as follows: Reproductions completed and placed on exhibition: Banana, entire plant in flower and leaf; Sprouting cocoanut, entire plant; *Carissa grandiflora*, fruit and flower branch of leaf; *Cydonia japonica*, branch in fruit and leaf; *Scrophularia Marylandica*, flower enlarged; *Hymenocallis caribæa*, entire plant; *Strychnos spinosus*, fruit and flower in leaf; *Sagittaria latifolia*, flower enlarged; *Casuarina equisetifolia*, flower enlarged; *Casasia clusiifolia*, branch fruiting and leafing; *Bombax grandiflora*, branch flowering and leafing; *Grevillea robusta*, branch flowering and in leaf; *Rhizoctonia solani*, *Macrosporium solani*, *Phytophthora infestans*, *Phoma destructiva*, on *Lycopersicum esculentum*; also parts of *Zamia*, *Coccoloba*, *Amanas* and *Gossypium*.

In the Department of Geology some installation has been performed, chiefly for the purpose of putting some mounts into such condition that they could be moved with safety. To this end, mounting of a large skeleton of *Megacerops* was completed and the mount placed in a case in which it is at present exhibited and can probably be transported. This skeleton is made up entirely of the bones of a single individual and is very nearly anatomically complete, only two or three vertebrae being missing. A few of the limb bones were modeled from corresponding parts on the opposite side, but this was done with entire accuracy by casting. The skeleton is the only one of this genus which has as yet been mounted in any museum, and is the first specimen to show that the members of the genus were long-tailed animals. It was among the most primitive of the Oligocene titanotheres and was about the size of the modern black rhinoceros. The skeleton is mounted in three-quarters relief. The matrix, base and background against which the skeleton is shown have been made of plaster, colored to imitate the greenish clay in which the specimen was found. The plaster has also been tooled in such a manner as to suggest the excavation of the skeleton from the matrix. The posture is that of an animal in life, the skeleton being supported on its feet. The head, neck, torso and right limbs are, however, connected with the background for support, and the feet are partially enclosed in the matrix. Iron rods, made as inconspicuous as possible, have been introduced to support the left limbs. The specimen was collected in South Dakota in 1898 by a Museum expedition. After dismounting some of the dinosaur specimens for packing, the opportunity was im-

proved to make some modifications in the positions of the bones which study had shown would more correctly represent their relations. Some readjustments of the installation of the meteorite collection have been made in order to introduce new specimens and group more closely the different classes. Packing of exhibited specimens has been carried on as rapidly as possible during the year, and as a result the contents of two hundred and forty-one cases have been made ready for shipment, leaving only thirty-eight cases still to be packed. In addition, the work of packing the remaining study and stored collections has been carried on and brought to completion except for some specimens now stored in the basement. Practically all material exhibited on bases, such as the large fossil vertebrate mounts, has also, with the exception of the large dinosaur, been disassembled as far as was necessary and made ready for transportation. In choosing the sequence of collections for packing, those in halls somewhat removed from the main passageways were taken first, in order that the movements of visitors might be interfered with as little as possible while the work of packing was going on. All but three halls of the Department have now been closed to the public, and their contents packed. In these three remaining halls many of the specimens have been packed in such a way as to make them still available for observation. In packing, owing to the weight and hardness of many of the specimens on exhibition in the Department, it was found necessary to remove most of them from the cases and place them in boxes of sizes and shapes suitable for their transportation. In so doing considerable attention was paid to recording the position of the specimens in the cases in such a way as to ensure their rapid and accurate reinstallation on their arrival at the new building. For this purpose each case was given an arbitrary number which includes the temporary number of the hall to which the case is to be sent in the new building. This number has also an absolute value, and is to be retained for the case even if another location for the case should be decided upon. Before removing the specimens from the case, each specimen was given a number showing the location of the specimen within the case, the numbering being in a uniform order for each case, where the specimens were installed in such a manner as to permit. Thus a number 3-10 indicates that in reinstallation the specimen is to be placed on the third shelf from the top of the case and tenth in position from the left end of the shelf. A label bearing this installation number is wrapped with each specimen and on the reverse side of the corresponding printed label a similar number is penciled. In some cases the installation numbers of the specimens were marked on slips which were then fastened in the cases in the positions which the specimens occupied. In other cases, especially where the

installation did not fall into orderly lines, sketches were made on cross-section paper which showed in each case the amount and position of the space occupied by each specimen; the spaces were then numbered and corresponding numbers were wrapped with the specimens and penciled on the labels. The sketch itself was then in each instance fastened inside the corresponding case, so as to prevent its being transferred to any other exhibit. Specimens mounted upon tablets, which include most of the invertebrate fossils, were, for the most part, fastened securely in drawers underneath the cases. Sketches of the positions of the tablets in the cases were first made and numbered and corresponding numbers were penciled on the reverse sides of the tablets. Upon the outside of all packages and boxes containing specimens removed from cases, large department labels similar to those fastened inside the exhibition cases have been placed, giving the corresponding hall and case numbers, so as to insure constant connection of the specimens with the case. There is, further, painted on each package or box a brief label in the department color which describes the nature of the contents. A record has also been prepared in book form which shows in detail the numbers and forms of the exhibition cases and in adjoining columns the halls and alcoves in which the cases are to be placed. As containers for specimens to be packed, boxes and barrels were chiefly used, boxes of the size 36" x 20" x 14" being found especially suitable. Several thousand cartons and small wooden boxes were also employed, either as shipment units or for enclosing individual specimens or groups of specimens in larger boxes. Specimens which would be injured by moving in any other than an upright position were fastened in the exhibition cases. The method for fastening usually adopted was that of screwing metal studs into the metal strips used for supporting brackets at the back of the case and fastening wooden strips on the front of the studs in such a manner as to firmly enclose the specimen and its accompaniment of packing material. Other specimens of such shape that their transportation in boxes would be unsafe, were similarly packed in the cases, and the specimen labels have generally been packed in the cases in which they were originally exhibited. The packing of the fossil collections especially called for varied handling according to weight, mass and fragility. Much storage material which was still in the plaster and burlap wrapping in which it came from the field, was packed in strong boxes of $\frac{3}{4}$ inch lumber. The collections stored in wooden trays, consisting mostly of specimens that had partially been removed from the matrix, were packed in the trays. Specimens in smaller containers, such as paper trays, were wrapped with the trays, each with its label enclosed, and the whole packed snugly in wooden trays by the use of excelsior. These trays

were then stacked to form units of 15 inches in height, the uppermost tray being turned bottom up so as to form a cover. The whole was then formed into a bale. This proved not only the quickest and most effective means of packing, but had the advantage of keeping the specimens in the same trays which are to serve as storage for them in the new building. The large casts, such as those of *Megatherium* and *Hadrosaurus* were taken down and crated in sections. The head and legs were removed, and the thorax reenforced by longitudinal rods lashed across the ribs and secured at either end. All were then crated in units of such size as to permit easy transportation. Smaller skeletons, such as those of the Irish Deer, *Glyptodon* and *Uintatherium* were crated on their bases, with the heads removed when too large to be readily enclosed. Smaller skeletons of a fragile nature were, with their bases, placed in light crates, and were secured by a series of cordage stays running to the sides of the crates. Thus secured, the specimens were returned to the exhibition cases and fastened in position either by means of wires running to iron straps in the back of the case or by blocks screwed to the bottom of the case. Specimens packed in exhibition cases in this way are believed to be assured a safer handling than those placed in unprotected crates. Smaller specimens, such as skulls, were generally packed in paper cartons and secured in the exhibition cases either by blocks or by long, wooden braces fastened to iron studs screwed into the perforated and threaded strips designed to support the shelf-brackets. In some instances, however, the cartons were packed in large, wooden boxes. Very large skulls, such as those of *Titanotherium* and *Eobasileus*, were packed in special wooden crates and the whole returned to the exhibition cases to be moved in them. The Miocene camel skeleton was packed by disarticulating the legs, removing the head and pelvis, and supporting the torso on short, upright rods attached to a temporary base. The whole was then fastened firmly in an exhibition case. A number of heavy and fragile objects, such as specimens of *Daemonelix* and dinosaur bones, required re-enforcing. This was accomplished by the use of plaster and burlap, plaster and iron rods or a combination of all these. Since the spirals of *Daemonelix* made up of loosely-cemented sand, would little more than bear their own weight when in an upright position, they were, before removal from the exhibition case, reenforced with plaster and strips of burlap. To guard against possible breakage and crumbling, four quarter-inch rods were laid across the spirals parallel to their main axes. The peripheries of the spirals were then wound with plaster bandages which, crossing the rods at every turn, bound the whole firmly together. The mounts of dinosaur limbs were taken down and each large bone crated separately.

Previously to crating, the bones were covered with tissue paper to prevent the plaster from adhering to their finished surfaces, 2x4 inch timbers were fitted to the surfaces thus prepared, and all was lashed fast with plaster and burlap bandages. A similar treatment was given the large skull of Triceratops, which, owing to its thin and brittle substance, required especial care. Secure packing of the six hundred specimens of crude petroleum also presented a problem of some difficulty. These oils were exhibited in glass-stoppered bottles eighteen inches high and an inch and a quarter in diameter. No practicable method of sealing the stoppers oil-tight without defacing the bottles was found, since leakage was to be expected if the bottles were not maintained in an upright position. It was necessary also to avoid the use of excelsior or other finely divided packing material which might, in case of accident, become saturated with oil. Accordingly the stoppers were secured against loosening by tying caps of cheesecloth over them. The bottles were then placed in light, wooden boxes each of a size to hold thirty and of a height to allow one-quarter of the length of each bottle to project. To each box two pieces of heavy straw board were fitted, one two inches from the bottom and one over the top, and in these boards holes slightly larger than the diameter of the bottles were cut. When the bottles were threaded through these holes they were held flexibly but securely in position, and the upper quarter of the bottles projecting above the box was covered by crating which permitted a free view of the character of the contents and will protect the box from being inverted or roughly handled. To further facilitate carrying the bottles in proper positions, each box was equipped with suitable handles. The larger bottles of the collection, some of them eighteen inches in diameter, were similarly packed, though in specially made crates. Boxes of special sizes were also provided for the collection of marbles, the size chosen being such as to permit rapid packing and avoid too great weight. Of the series on exhibition in the West Court, the relief maps and the large model of the moon have been taken down and packed, leaving only the meteorite, crystal and gem collections now on exhibition.

Packing has been actively pursued in the Department of Zoölogy during the year. The only material in the Division of Mammalogy and Ornithology not ready for moving consists of the large habitat groups and the study collection of birds. The entire serial exhibition collections of mammals and birds have been secured *in situ* in their cases by means of cleats and braces or other devices to hold them securely in place. The study collection of mammals has been fully packed, mostly in original containers and the rooms in which they were kept have been dismantled. When not engaged in packing, one assistant has continued

in the preparation of plant accessories for the several large mammal groups still uncompleted, the Olympic elk group, the bison group, and the capybara group. The taxidermists have finished the preliminary models and manikins for a single Alaska moose. A giraffe and a hippopotamus are partly finished and practically ready for installation. The entire collection of the Division of Ichthyology and Herpetology was packed during the year and is now ready for shipment to the new building. The Section of Taxidermy has prepared the accessories for a number of small groups of local fishes and has been engaged in mounting certain fishes to fill in gaps in the synoptic series, which it is planned to make comparatively complete. In the Division of Entomology over three months at the beginning of the year were devoted to preparations for moving. As the entomological collections can be packed rather expeditiously and as it was unwise to render them inaccessible for any great length of time, the members of this Division assisted in the preparation of other material for removal. A large part of the year has been devoted to the making of two insect groups for a new case that was designed and built to accommodate them. One of the groups will represent the most conspicuous and characteristic insects of the sand dune region at Miller, Indiana, and the other will show the well known and destructive tomato worm in all its stages and with wax reproductions of its natural surroundings, etc. For specimens, casts of burrows, leaves and other accessory material, local field trips were made whenever they were considered necessary. While neither of the two groups has yet been finished, both have been so far advanced toward completion that they will be ready for installation by the latter part of January. The Division of Osteology packed fifteen exhibition cases with mounted skeletons and eighty-nine crates and boxes of various sizes, such as those for the whale, elephant, rhinoceros, hippopotamus and camel, including small ones for small ligamentary skeletons and skulls, which are now ready for removal. The skeletons, numbering twenty-seven (mostly ligamentary), that could not be packed in the condition they were in, were remounted.

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION OF FIELD MUSEUM OF NATURAL HISTORY.

— At the close of the year there were 646 cases available for circulation among the public schools of Chicago. In view of the painstaking methods employed in the taxidermy and accessory work of all zoological groups, it is with pride and pleasure that attention is called to the fact that of the total cases available for circulation, fifty-eight zoological cases were completed during the past year.

When plans were being formulated for the actual loaning of cases to the public schools, it was the opinion of a committee composed of school

principals that only schools of elementary grades would be best served with loan cases. This idea has been followed out from the inauguration of the system up to the present time. During the next scholastic year the high schools, at the written request of Mr. J. E. Armstrong, Assistant Superintendent of Schools, will be scheduled to receive cases. In his request Mr. Armstrong said of the cases, "I have studied them with great interest and am firmly of the opinion that they would be of very great assistance in the high schools."

The Superintendent of the Municipal Pier formally requested cases be placed on exhibition on the pier during the period of school vacation, as was done last year. His request was granted and twenty-four cases were placed on exhibition there during the time specified. When the cases were returned to the Museum the Superintendent expressed his thanks and added, "I believe I am voicing the thanks also of a large body of visitors who found entertainment and instruction in leisurely contemplating your beautiful exhibits and the lessons they teach."

In reptile and similar branches of taxidermy the employment of the skin of a specimen for mounting has not given satisfactory results. The effects usually obtained being a shrunken and parchment-like surface and a fading and disappearance of the natural colors. As these faults seemed impossible to remedy, the use of the specimen's skin for mounting purposes has practically been abandoned. Better, though not entirely approved results, have been derived by making, in plaster, celluloid and other materials, casts of specimens, which were afterwards painted to represent the natural colors. Painting on the surface of a skin or on a cast has never brought an effect comparable with the living model. In order to produce an effect more natural in appearance than that accomplished by the use of the skin or by casts, this Department has been, at intervals during the past year, experimenting with pyralin, celluloid and similar materials. With celluloid as a medium it is found possible to make reproductions of a character so closely resembling the structure and coloring of the skin of the living specimen as to eliminate the necessity of painting it, thus displacing the objectionable appearance of paint as it is usually employed. Experiments have also been made in foliage reproducing in celluloid, using electro-deposited metal molds which possess strength sufficient to withstand the pressure required in the molding operations. The strength and elasticity of the celluloid is such as to correct the objectionable necessity of making the artificial leaf unnaturally thick.

During the year a request was received from Mr. H. Bolton, Director, Museum and Art Gallery, Bristol, England, and Secretary, Educational Section, The British Association for the Advancement of Science, for

information concerning the work and scope of this Department, the data thus provided to be placed before the Association's meeting at Bournemouth in September. A request was made for the loan of several cases by the Woodlawn Branch of the Chicago Public Library.

The Director of the Orthogenic Department of Rush Medical College, University of Chicago, visited this Department and after making a careful study of the cases on hand, requested the loan from time to time of several of them, stating that they would be very helpful in instructing backward children, classes of which are conducted by that college. The request was granted and two cases of economic material were loaned.

PHOTOGRAPHY AND ILLUSTRATION.—The following is a tabulation of the work performed in this section:

	Number of Negatives made	Number of Prints made	Number of Enlarge- ments made	Number of Negatives developed for Field Expeditions	Number of Positives made. Used in making Enlarge- ments
General	45	146	..	..	..
Anthropology	278	470	2	..	1
Botany	6	339	..	..	..
Geology	18	42	..	..	..
Zoölogy	98	..	..	..	..
Harris Extension	5	79	..	46	..
Distribution . . . . .	...	...	..	..	..
Gift . . . . .	...	23	..	..	..
Sale . . . . .	...	108	..	..	..
Totals	450	1,207	2	46	1

Total number of Catalogue entries during year 1919	1,706
Total number of Catalogue entries to December 31, 1919	120,844
Total number of Record Books	20

PRINTING.—The number of labels and other impressions made by the Section of Printing is as follows:

	Exhibition Labels	Other Impressions
Anthropology	5,921	1,200
Botany	91	4,650
Geology	610	2,100
Zoölogy	41	4,716
Harris Extension	355	800
General . . . . .	....	16,250
Library . . . . .	....	2,250

Herewith are also submitted financial statements, list of accessions, names of members, etc., etc.

FREDERICK J. V. SKIFF, Director.

FINANCIAL STATEMENT.

RECEIPTS AND DISBURSEMENTS.

January 1, 1919, to December 31, 1919.

RECEIPTS

Cash in Treasurer's hands December 31, 1918:

General Fund	\$3,103.19	
Picture Postal Cards Fund	42.32	
Sinking Fund	347.96	\$ 3,493.47

Petty Cash on hand December 31, 1918	739.95
Dues of Annual Members	750.00
Dues of Life Members	17,600.00
Admissions and Check Rooms	3,780.15
South Park Commissioners	15,000.00
Interest on Investments and Bank Balances	9,990.83
Field Endowment Income	131,500.00
Field Endowment Sinking Fund	4,573.68
Field Endowment Sinking Fund — Income	1,567.27
New Building Moving and Furnishing Fund	23,235.00
Picture Postal Cards — Sales	693.32
Mrs. Stanley Field Plant Reproduction Fund	8,490.00
Sale of Publications — Special	468.88
William J. Chalmers Crystal Collection	500.00
Sundry Funds — Investment Income	7,026.60

Donations — Special:

Charles R. Crane	\$ 500.00	
Mrs. T. B. Blackstone	2,500.00	
Dr. Frank W. Gunsaulus	300.00	
Chauncey Keep	300.00	
Edward E. Ayer	100.00	
Martin A. Ryerson	25.00	3,725.00

\$233,134.15

DISBURSEMENTS

Salaries	\$ 78,823.06
Guard Service	11,981.60
Janitor Service	7,016.15
Fire Protection	3,817.10
Heat and Light	19,912.61
Repairs and Alterations	9,811.79
Packing Supplies	1,531.84

332 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

Furniture and Fixtures:

Exhibition Cases	\$ 168.00	
Herbarium Cases	512.00	680.00

The Library:

Books and Periodicals	\$ 628.85	
Binding, etc.	167.96	796.81

Collections Purchased		476.15
Installation Supplies		887.21
Publications		1,150.20
Photography and Printing Supplies		409.61

General Expense:

Freight, Expressage and Teaming	\$1,478.69	
Stationery, Postage and Telephone	647.11	
Liability Insurance	693.43	
Sundries	1,059.30	3,878.53

Mrs. Stanley Field Plant Reproduction Fund		7,682.49
Stanley Field Ornithology Fund		50.00
William J. Chalmers Crystal Collection Fund		280.25
Joseph N. Field South Pacific Islands Fund		286.20
Employee Liberty Loan Bonds		1,399.60
New Building Moving and Furnishing Fund — Investments		26,965.00
Life Memberships Fund — Investments		18,220.00
General Fund Investments — Suspense		17,600.00
Sinking Fund — Investments		6,265.00
Picture Postal Cards Fund — Investments		800.00
Sundry Funds — Investments		1,150.00

\$221,871.20

In Treasurer's hands, December 31, 1919:

General Fund	\$9,590.90	
Picture Postal Cards Fund	12.10	
Foreign Exchange	920.00	10,523.00

Petty Cash on hand December 31, 1919		739.95
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\$233,134.15

ATTENDANCE AND RECEIPTS FROM JANUARY 1, 1919, TO DECEMBER 31, 1919.

ATTENDANCE

Paid Attendance:

Adults	13,069	
Children	1,465	14,534

Free Admission on Pay Days:

School Children	4,637	
Students	2,645	
Teachers	345	
Members	52	
Officers' Families	84	
Press	8	
Special	731	8,502

Admission on Free Days:

Saturdays	20,975	
Sundays	79,788	100,763

Total Attendance	123,799
Highest Attendance on any one day (July 6, 1919)	4,634
Highest paid Attendance on any one day (September 1, 1919)	667
Average Daily Admissions (363 days)	341
Average Paid Attendance (259 days)	56

RECEIPTS

Articles checked — 7,560 at 5 cents each	\$ 378.00
Admissions	3,402.15
	<u>\$3,780.15</u>

ACCESSIONS.

DEPARTMENT OF ANTHROPOLOGY.

ANDERSON, MARY LOUISE, Chicago.

1 piece of cartonnage from mummy-wrappings, 3 hands and 1 lower leg from mummy — Egypt (gift).

AYER, EDWARD E., Chicago.

6 Malayan kris — Borneo and Palawan (gift).

White-deer dance ceremonial feather head-band — Hupa, California (gift).

1 Sioux beaded buckskin dress — United States (gift).

1 stone mortar with pestle, 1 child's metate with muller — Southern California (gift).

BROWN, ALFRED REGINALD, Tonga, South Pacific.

Ethnographical material, chiefly basketry, weapons, headdresses, ornaments, 2 wooden images, altogether 113 specimens — Andamans and Nicobars (gift).

JOSEPH N. FIELD SOUTH PACIFIC ISLANDS FUND.

Wood-carvings, images, weapons, implements, clothing, ornaments, and other ethnographical material — North Coast of Dutch New Guinea (gift).

FIELD, STANLEY, Chicago.

Cloisonné portrait statue of a Tibetan Grand Lama, presumably Pal-dan-ye-she (1738-1780) — Peking (gift).

FITZ-WILLIAM, G. L., Hammond, Indiana.

Ethnographical objects from the San Blas Indians — Panama (gift).

GUNSAULUS, FRANK W., Chicago.

Ethnological objects: 2 costumes, textiles, necklaces, ornaments, sword, wood carvings, etc. — Formosa (gift).

1 decorated metal shield — India (gift).

4 glazed pottery tiles — Persia (gift).

1 celadon flower-vase in shape of an elephant — Japan (gift).

GUNSAULUS, HELEN C., Chicago.

1 dagger with ornamented sheath and hilt — Japan (gift).

LORD, J. B., Chicago.

Buddhist bronze statuette — China (gift).

MASON, J. A., Chicago.

Ethnological and archaeological material from the Papago Indians, Piman stock — Santa Rosa, Arizona (gift).

McCAULEY, MRS. CHAS. A. H., Highland Park, Illinois.

Miscellaneous ethnographical collection from Philippines and American Indians — Philippines, Aden, America (gift).

MORRIS, JOSEPH R., Deerfield, Illinois.

Ethnographical objects from Sioux Indians — Fort Peck, Montana (gift).

PATTEN, MRS. HENRY J., Evanston, Illinois.

Ancient feather blanket of Maori chief — Rotorua, New Zealand (gift).

RYERSON, MARTIN A., Chicago.

1 slate carving — Queen Charlotte Islands, B. C. (gift).

SARGENT, HOMER E., Pasadena, California.

2 Navajo blankets (gift).

4 blankets — Southwest and Northwest Coast, U. S. A. (gift).

VIVIAN, G. F., Chicago.

7 bows, 36 arrows — Demerara, British Guiana (gift).

WOODWARD, MRS. MORGAN S., Chicago.

1 jingal, 5 rifles, 10 swords, 3 pistols, 3 cartridge-belts, 2 cannon-balls,
2 spears, 2 flags, 1 fireman's coat, 1 bamboo jacket, 1 bow, 1 printing-
block, 2 musical instruments — Peking, China (gift).

WRIGLEY, WILLIAM JR., Chicago.

Pre-Columbian gold ornaments — Mound on Nechi River, Colombia
(gift).

DEPARTMENT OF BOTANY.

BENKE, H. C., Elgin, Illinois.

1 herbarium specimen — Illinois (gift).

BERNICE PAUAI BISHOP MUSEUM, Honolulu, Hawaiian Isls.

262 herbarium specimens — Hawaiian Isls (exchange).

BUSH, B. F., Courtney, Missouri.

102 herbarium specimens — Missouri (gift).

COOK, A. T., Hyde Park, New York.

1 specimen potato seed balls — New York (gift).

DAHLGREN, B. E., Chicago.

1 fruit of Traveller's tree — Florida (gift).

DEAM, CHARLES C., Bluffton, Indiana.

22 herbarium specimens — Indiana and Michigan (gift).

DENSLOW, H. M., New York City, New York.

73 herbarium specimens — New York, Vermont and New Jersey
(exchange).

FIELD MUSEUM OF NATURAL HISTORY.

Collected by E. T. Harper:

Various fungi.

Collected by C. F. Millsbaugh:

4 herbarium specimens — California.

Purchases:

285 herbarium specimens — Mexico.

Mrs. Stanley Field Plant Reproduction Laboratory:

135 herbarium and economic specimens — Miami, Florida.

4 herbarium specimens — Georgia.

16 models — various localities.

Reproductions of *Picus carica*, *Cassia clusifolia*, *Strychnos spinosus*,
Persea Persea.

GAUMER, DR. GEO. F., Izamal, Mexico.

2 herbarium specimens — Yucatan (gift).

GEOLOGICAL SURVEY OF CANADA, Ottawa, Canada.

248 herbarium specimens — various localities (exchange).

23 herbarium specimens — various localities (gift).

336 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

HALL, ELIHU, THE FAMILY OF, Athens, Illinois.

Private herbarium Elihu Hall — various localities (gift).

JAPANESE COMMISSIONERS — W. C. E., Chicago.

50 specimens of tea (gift).

JONES, ARTHUR B., Evanston, Illinois.

1 herbarium specimen — New York (gift).

KING, ANNA, Ottawa, Illinois.

300 herbarium specimens — Illinois (gift).

LANSING, O. E., JR., Chicago.

76 herbarium specimens — Illinois (gift).

LUDWIG, C. A., Washington, D. C.

2 herbarium specimens — Virginia (gift).

MCDONALD, F. E., Peoria, Illinois.

63 herbarium specimens — Illinois (gift).

McLAIN, A. O., Chicago.

1 section of bark of Big tree, 2 cones of Coulter's pine — California (gift).

MILLSPAUGH, CHARLES F., Chicago.

7 seeds — various localities (gift).

26 illustrations and descriptions (gift).

65 herbarium specimens — Wisconsin (gift).

NEW YORK BOTANICAL GARDEN, Bronx Park, New York City.

507 herbarium specimens — Colombia (exchange).

11 herbarium specimens — New Providence, Bahamas (exchange).

PARKE, DAVIS & CO., Detroit, Michigan.

6 herbarium specimens — Michigan (gift).

PETERSEN, N. F., Reno, Nevada.

2 herbarium specimens — Nevada (gift).

PHILIPPINE BUREAU OF SCIENCES, Manila, P. I.

180 herbarium specimens — Philippine Isls. (exchange).

466 herbarium specimens — various localities (exchange).

RIDGWAY, ROBERT, Olney, Illinois.

5 herbarium specimens — Illinois (gift).

SHERFF, EARL E., Chicago.

20 herbarium specimens — University of Chicago greenhouse (gift).

8 herbarium specimens — Illinois (gift).

Original description of *Taraxacum ceratophorum* and *Taraxacum lyratum* (gift).

7 original descriptions of *Xanthium* (gift).

1 herbarium specimen — Chicago, Illinois (gift).

Original description of genus *Taraxacum* (gift).

1 description of *Xanthium* and 1 specimen of *Xanthium* — Kansas (gift).

10 herbarium specimens — Illinois and Mexico (gift).

TONDUZ, ADOLPH, Costa Rica.

6 herbarium specimens — Costa Rica (gift).

UNITED STATES CUSTOMS HOUSE, APPRAISER'S STORE, Chicago.

2 samples gourd seed — Custom House (Africa) (gift).

UNITED STATES NATIONAL MUSEUM, Washington, D. C.

94 herbarium specimens — various localities (exchange).

DEPARTMENT OF GEOLOGY.

BRITISH MUSEUM (NATURAL HISTORY), London, England.

4 specimens of Baroti, Kuttipuram and Warbreccan meteorites (exchange).

BUCKSTAFF, RALPH, Oshkosh, Wisconsin.

1 specimen obsidian — Mexico (gift).

2 specimens Cumberland Falls meteorite — Cumberland Falls, Kentucky (gift).

CHALMERS, W. J., Chicago.

1 amethyst crystal — Mount Pleasant, Maine (gift).

2 scheelite crystals — Arizona (gift).

CHAMBERLAIN, MRS. COL., Los Gatos, California.

2 specimens fossil wood partly altered to lignite — Los Gatos, California (gift).

FIELD MUSEUM OF NATURAL HISTORY.

Collected by B. E. Dahlgren:

90 specimens invertebrate fossils, 35 specimens soils, coquina and products of weathering — Florida, Kentucky and Tennessee.

Collected by H. W. Nichols:

8 specimens of ores, minerals and rocks — Porcupine, Ontario.

Purchases:

1 specimen Richardton meteorite — Richardton, North Dakota.

2 specimens Cumberland Falls meteorite — Cumberland Falls, Kentucky.

GALLAGHER, J. F., Chicago.

7 specimens mineral abrasives and roofing material — various localities (gift).

GILL, DR. GEO. M., Chicago.

10 specimens minerals (gift).

JILLSON, W. R., Frankfort, Ky.

1 specimen Cumberland Falls meteorite — Cumberland Falls, Kentucky.

KANST, EDWIN A., Chicago.

1 group gypsum crystals in clay — 95th St. & Stony Id. Ave., Chicago (gift).

KLECKNER, M. E., Tiffin, Ohio.

109 specimens calcite, fluorite and celestite — Ohio and Michigan (exchange).

LANGFORD GEORGE, Joliet, Ills.

130 specimens of vertebrate fossils, chiefly remains of mastodons and mosasaurs — Illinois and Kansas (gift).

MACE, MRS. G., Oak Park, Ills.

31 specimens of ores and minerals — various localities (gift).

MARINER & HOSKINS, Chicago.

1 specimen arsenic crystals (gift).

1 group crystals of metallic arsenic — Chicago (artificial) (gift).

MORRIS, J. R., Deerfield, Illinois.

1 fossil coral — Petokey, Michigan (gift).

QUIRKE, T. T., Minneapolis, Minnesota.

3 specimens Richardton meteorite — Richardton, North Dakota (exchange).

RENNINGER, EDW., Chicago.

65 specimens fossils and concretions — various localities (gift).

338 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

SCHAEFER, WALTER, Chicago.

1 specimen Calymene — near Lemont, Illinois (gift).

SKINNER, WM. G., South Porcupine, Ontario.

2 specimens barite — Langmuir, near Porcupine, Ontario (gift).

UNIVERSITY OF IOWA, Iowa City, Iowa.

6 specimens Barbadoes earth, 1 specimen Globigerina marl — Barbadoes
Is. (exchange).

DEPARTMENT OF ZOOLOGY.

AMERICAN MUSEUM OF NATURAL HISTORY, New York City.

Skulls of African elephant and white rhinoceros — (exchange).

AYER, EDWARD E., Chicago.

1 snake skin, without head — (gift).

BEATY, W. L., South Butte, Montana.

1 specimen American goshawk — South Butte, Montana (gift).

BRANDLER, CHARLES, Chicago.

1 sculpin — Lake Michigan (gift).

3 lake-herring — Chicago (gift).

BUMSTEAD, COL. DALE, Oak Park, Illinois.

3 mountain sheep (skins and skulls), 3 deer (skulls) — Lower California
(gift).

COALE, HENRY K., Highland Park, Illinois.

6 specimens Japanese birds — Japan (gift).

COOPER, A. R., Chicago.

3 cottoid fishes — Port Credit, Ontario (gift).

CORY, CHARLES B., Chicago.

1 ruffed grouse — Grandview, Wisconsin (gift).

CROZIER, W. J., Chicago.

Shells of two specimens of *Chiton tuberculatus*, having the seventh
and eighth valves fused — Cross Bay, Bermuda (gift).

DESPOTT, GIUSEPPE, Malta.

433 shells — Maltese Islands (gift).

FIELD MUSEUM OF NATURAL HISTORY.

Collected by C. L. Hubbs and L. L. Pray:

6 sunfishes of rare species — Jackson Park Lagoon.

Collected by C. L. Hubbs, L. L. Pray and L. L. Walters:

27 fishes for mounting — Jackson Park Lagoon.

Transfer from Department of Anthropology.

1 lizard — Egypt.

Purchases:

42 specimens marine invertebrates, marine fishes, treefrog, frog, lizards,
young alligator — Florida.

1 specimen gar — Wisconsin.

27 specimens nematodes, centipedes, millipedes and snakes — Illinois.

STANLEY FIELD ORNITHOLOGY FUND.

190 specimens birds — various localities (gift).

3 mammals (skins and skulls) — various localities (gift).

FISHER, MRS. H. S., Chicago.

500 shells (approx.) — near St. Petersburg, Florida (gift).

FORBIS, HOMER, Albany, Missouri.

1 ichneumon fly — Albany, Missouri (gift).

1 cicada — Albany, Missouri (gift).

FRIESSER, JULIUS, Chicago.

3 turtles — Michigan (gift).

FRISON, THEO. H., Champaign, Illinois.

6 bumble-bees — Massachusetts, New York, Illinois and Nova Scotia (exchange).

GERHARD, WM. J., Chicago.

1 ribbon snake — northern Indiana (gift).

9 garter snakes — Illinois (gift).

1 snake — New Lenox, Illinois (gift).

GUERET, E. N., Chicago.

2 robber-flies — Chicago (gift).

12 sphinx moths — Chicago (gift).

GUNSAULUS, HELEN C., Chicago.

1 snowy heron mounted in a frame with a curved, painted background — near Glenwood Springs, Colorado (gift).

HAWKINS, F. P., Chicago.

1 walrus skull and tusks — (gift).

HUBBS, CHARLES L., San Diego, California.

3 velvet ants — San Diego, California (gift).

2 lizards, 5 snakes — San Diego County, California (gift).

HUBBS, CARL L., Chicago.

1 garter snake — Chicago (gift).

1 turtle — Chicago (gift).

31 fishes, 3 snakes — Illinois (gift).

3 waterbugs — Dune Park, Indiana (gift).

20 waterbugs — Miller, Indiana (gift).

HUBBS, C. L. & L. L. WALTERS, Chicago.

25 fishes, 5 toads, 1 lizard — Lake County, Indiana (gift).

HYMAN, C. H., Chicago.

1 king rail — Jackson Park, Chicago (gift).

KLEINPASTE, J. B., Chicago.

1 praying mantis — in Chicago, on a load of lumber from the South (gift).

LILJEBLAD, EMIL, Chicago.

1 lizard, 4 snakes, 1 bryozoan colony — Illinois (gift).

MACKELDEN, J. W., St. Louis, Missouri.

30 amphibians and reptiles — Mississippi basin (gift).

McCAULEY, MRS. C. A. H., Highland Park, Illinois.

1 glass sponge — Philippine Islands (gift).

MORRIS, JOSEPH R., Deerfield, Illinois.

12 shells — (gift).

OLIVER, J. K., Monterey, California.

1 abalone shell — Monterey, California (gift).

PEACOCK, CHARLES, Chicago.

1 mounted green turtle — southern Florida (gift).

PRAY, LEON L., Chicago.

1 snake — Beverly Hills, Illinois (gift).

340 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

- REEVE, REX W., Chicago.
1 milk snake — Tremont, Indiana (gift).
RENNINGER, EDW., Chicago.
3 shells — Florida (gift).
ROTHSCHILD & COMPANY, Chicago.
1 cichlid fish (gift).
SACKHEIM, M. H., Santa Fe, New Mexico.
3 lizards — vicinity of Santa Fe, New Mexico (gift).
SIEGEL, FRANK R., Chicago.
1 muskallunge weighing 42 pounds — Cat-fish Lake, Wisconsin (gift).
SINCLAIR, J. G., Chicago.
1 spade-foot toad, 4 lizards, 1 snake — Arizona (gift).
2 scorpions, 10 beetles — Tucson, Arizona (gift).
STODDARD, HERBERT L., Chicago.
1 garter snake — northern Indiana (gift).
8 snakes, 3 lizards — northern Indiana (gift).
35 wall lizards — France (gift).
TOWNSLEY, F. O., Yosemite City, California.
1 snake skin (gift).
U. S. NATIONAL MUSEUM, Washington, D. C.
7 mammals — various localities (exchange).
WALTERS, LEON L., Chicago.
1 garter snake — South Chicago, Illinois (gift).
20 snakes, 1 turtle — Indiana and Illinois (gift).
WELD, L. W., Evanston, Illinois.
4 gall-insects (& 4 galls) — Williams, Arizona (gift).
WESTFALL, C. C., Chicago.
10 wood-boring isopods — Manchac pass, between Lakes Maurepas and Pontchartrain, Louisiana (gift).
WOLCOTT, MRS. A. B., Chicago.
1 spider — (gift).

SECTION OF PHOTOGRAPHY.

FIELD MUSEUM OF NATURAL HISTORY.

Made by Mrs. Stanley Field Plant Reproduction Expedition:

156 negatives plants, views, etc. — Southern Florida.

Made by Section:

1706 negatives and prints of Museum specimens.

HIGGINS, JOHN A., University of Illinois College of Medicine.

1 negative of Areca Catechu nuts — Philippine Islands.

THE LIBRARY.

BOOKS, PAMPHLETS, AND SERIALS.

(ACCESSIONS ARE BY EXCHANGE UNLESS OTHERWISE DESIGNATED.)

AFRICA

Durban Museum	1
East Africa and Uganda Natural History Society, Nairobi	1
Geological Society, Johannesburg	1

Institut de Carthage, Tunis	1
Rhodesia Scientific Association, Bulawayo	1
Royal Society of South Africa, Cape Town	1
South Africa Association for Advancement of Science, Cape Town	1
South African Museum, Cape Town	1
ARGENTINA	
Academia de Ciencias, Cordoba	1
Museo Nacional de Historia Natural, Buenos Aires	1
Universidad Nacional, Facultad de Filosofía y Letras, Buenos Aires	1
AUSTRALIA	
Australian Museum, Sydney	1
Australian Ornithologists' Union, Melbourne	1
Botanic Gardens and Government Domains, Sydney	1
Department of Agriculture, Adelaide	2
Department of Agriculture, Sydney	1
Department of Agriculture, Wellington	1
Department of Fisheries, Sydney	1
Department of Mines, Sydney	1
Field Naturalists' Club, Melbourne	1
Forestry Commission, Sydney (gift)	1
Geological Survey, Perth	4
Government of the Commonwealth, Melbourne	2
Institute of Science and Industry, Sydney	1
Linnean Society of New South Wales, Sydney	1
National Herbarium, Melbourne	1
Public Library, Museum and Art Gallery, Adelaide	1
Public Library, Museums and National Gallery of Victoria, Melbourne	1
Queensland Department of Mines, Brisbane	4
Queensland Museum, Brisbane	1
Royal Australasian Ornithologists' Union, Melbourne	2
Royal Geographical Society of Australasia, Brisbane, Queensland	2
Royal Society of New South Wales, Sydney	1
Royal Society of Queensland, Brisbane	1
Royal Society of South Australia, Adelaide	2
Royal Society of Tasmania, Hobart	2
Royal Society of Victoria, Melbourne	2
Royal Society of Western Australia, Perth	4
South Australian Ornithological Society, Adelaide	1
University of Melbourne	1
Victoria Department of Agriculture, Melbourne	2
Western Australia Geological Survey, Perth	2
BELGIUM	
Académie Royale de Belgique, Brussels	9
Jardin Botanique de l'Etat, Brussels	1
Société Royale d'Archéologie, Brussels	1
Société Royale des Sciences, Liège	1
BRAZIL	
Bibliotheca Nacional, Rio de Janeiro	2
Instituto Agronomico de Estado, Sao Paulo	1
Ministerio da Agricultura, Industria e Commercio, Rio de Janeiro	1

342 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

Museu Nacional, Rio de Janeiro	1
Museu Paulista, Sao Paulo	1
Servico Geologico e Mineralogico, Rio de Janeiro	1
CANADA	
Department of Agriculture, Ottawa	10
Department of Agriculture, Victoria	1
Department of Marine and Fisheries, Ottawa	1
Department of Mines, Ottawa	1
Department of the Interior, Geological Survey, Ottawa	10
Entomological Society of Ontario, Toronto	1
Horticultural Societies of Ontario, Toronto	1
McGill University, Montreal	2
Nova Sootian Institute of Science, Halifax	1
Provincial Museum, Victoria	2
Royal Canadian Institute, Toronto	1
Royal Society of Canada, Ottawa	1
Société de Géographie, Quebec	1
CEYLON	
Colombo Museum	1
Royal Botanic Garden, Perideniya	2
CHILE	
Biblioteca Nacional, Santiago de Chile	1
CHINA	
Botany and Forestry Department, Hong-Kong	1
DENMARK	
Botanical Garden, Library, Copenhagen	1
K. Bibliotek, Copenhagen	1
Naturhistorisk Forening, Copenhagen	1
Société Royale des Antiquités du Nord, Copenhagen	1
University of Copenhagen	2
ECUADOR	
Biblioteca de Alquier, Quito	1
Sociedad Ecuatoriana de Estudios Historicos Americanos, Quito	1
EGYPT	
Ministry of Public Works	4
FIJI ISLANDS	
Fijian Society, Suva, Fiji Islands (gift).	1
FRANCE	
Académie des Sciences, Paris	2
L'Ecole des Langues Orientales Vivantes, Paris	
Faculté des Sciences, Marseille	2
Musée d'Histoire Naturelle, Marseille	1
Muséum National d'Histoire Naturelle, Paris	2
La Nature, Paris	2
Société Botanique de France, Paris	1
Société d'Etudes Scientifiques, Angers	3
Société des Sciences Naturelles, La Rochelle	1
Société de Géographie, Paris	1
Société de Géographie, Toulouse	2
Société Franco-Japonaise, Paris	1

Société Nationale d'Agriculture, Sciences et Arts, Angers	1
Société Zoologique, Paris	2
Université de Montpellier, Cette	2

GERMANY

K. Sächsische Gesellschaft der Wissenschaften, Leipzig	1
K. Zoologisches und Anthropologisch-Ethnographisches Museum, Dresden	1
Naturforschende Gesellschaft, Freiburg	1
Naturwissenschaftlicher Verein für Schleswig-Holstein, Kiel	1

GREAT BRITAIN AND IRELAND

Ashmolean Natural History Society of Oxfordshire, Oxford	1
Belfast Naturalists' Field Club	1
Brighton and Hove Natural History and Philosophical Society, Brighton	1
Bristol Museum and Art Gallery	1
British Association for the Advancement of Science, London	1
British Museum (Natural History), London	3
Cambridge Antiquarian Society	1
Cambridge Philosophical Society	1
Cambridge University Library	1
Fisheries Board, Edinburgh	2
Geographical Society, London	2
Great Britain Geological Survey, London	2
Imperial Bureau of Entomology, London	2
Imperial College of Science and Technology, London	1
Lancashire Sea Fisheries Laboratories, Liverpool	1
Linnean Society, London	3
Liverpool Biological Society	2
Manchester Literary and Philosophical Society	1
Manchester Museum	1
Natural History Society of Northumberland, Durham and Newcastle-on-Tyne	1
National Museum of Wales, Cardiff	1
Royal Anthropological Institute of Great Britain and Ireland, London	1
Royal Botanic Gardens, Edinburgh	1
Royal Botanic Gardens, Kew	2
Royal Colonial Institute, London	1
Royal Dublin Society	2
Royal Horticultural Society, London	1
Royal Society, London	2
Royal Society of Arts, London	1
Royal Society of Edinburgh	2
South London Entomological and Natural History Society	1
Tring Zoological Museum	1
Victoria and Albert Museum, London	1
Wellcome Chemical Research Laboratories, London	12
Zoological Society of London	1

INDIA

Anthropological Society, Bombay	1
Archæological Survey, Calcutta	5
Archæological Survey, Lahore.	1
Botanical Survey, Calcutta	2

344 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

Department of Agriculture, Bombay	1
Department of Agriculture, Madras	2
Department of Agriculture, Pusa	1
Geological Survey, Calcutta	4
Government Museum, Madras	1
Hyderabad Archaeological Society	1
Indian Museum, Calcutta	7
National Indian Association, Calcutta (gift)	1
Superintendent Hindu and Buddhist Monuments, Lahore	1
ITALY	
Accademia Giornia de Scienze Naturali, Catania	1
American Academy in Rome	1
Istituto Botanico dell'Universita de Pavia	2
Istituto Geografico de Agostini, Novara	1
Laboratorio di Zoologia Generale e Agraria, Portici	1
Museo Civico di Storia Naturale, Genoa	1
R. Accademia delle Scienze, Turin	3
R. Accademia di Scienze, Lettere ed Arti, Acireale	1
Società dei Naturalisti, Naples	1
Società Geografica Italiana, Rome	1
Società Geologica, Rome	1
Società Italiana d'Antropologia e Etnologia, Florence	1
Società Italiana de Scienze Naturali, Milan	1
Società Toscana di Scienze Naturali, Pisa	2
JAPAN	
Akita Mining College	1
Anthropological Institute, Tokyo	3
Bureau of Productive Industry Formosa Government, Taihoku	1
Geological Society, Tokyo	2
Imperial University of Tokyo, College of Agriculture	2
Imperial University of Tokyo, College of Science	2
Tohoku Imperial University, Sendai	1
Tokyo Botanical Society	1
JAVA	
Bataviaasch Genootschap van Kunsten en Wetenschappen, Batavia	2
Department of Agriculture, Buitenzorg	6
Encyclopaedisch Bureau, Weltevreden	1
Jardin Botanique, Buitenzorg	2
KOREA	
Government-General Chosen, Seoul	1
MEXICO	
Director General de Estadistica, Mexico	2
Instituto Geologico, Mexico	2
Sociedad Cientifica "Antonio Alzate," Mexico	1
Sociedad Geologico, Mexico	1
Sociedad Mexicana de Geografia y Estadistica, Mexico	3
NETHERLANDS	
Bataafsch Genootschap der Proefonder Vindelijke Wijsbegeerte, Rotterdam	2
K. Instituut voor de Taal-Land-en Volkenkunde van Nederlandsch Indie, The Hague	2

K. Nederlandsch Aardijkundig Genootschap, Amsterdam	1
Nederlandsche Dierkundige Vereeniging, Leiden	1
Rijks Ethnographisch Museum, Leiden	1
Rijks Herbarium, Leiden	1
Rijks Museum van Natuurlijke Historie, Leiden	1
Société des Amis de l'Art Asiatique, Amsterdam	1
NEW ZEALAND	
Acclimatisation Society, Wellington	1
Auckland Institute and Museum, Wellington	1
Department of Agriculture, Wellington	2
Department of Mines, Wellington	2
New Zealand Institute, Wellington	1
PERU	
Cuerpo de Ingenieros de Minas, Lima	1
Sociedad Geografica de Lima	1
PORTUGAL	
Academia das Sciencias de Lisboa	2
Institutó d'Anatomie, Lisbon	1
Société Portugaise des Sciences Naturelles, Lisbon	2
SPAIN	
Broteria, Salamanca	2
Institució Catalana d'Historia Natural, Barcelona	1
Junta de Ciencias Naturals, Barcelona	8
R. Academia de Ciencias Exactas, Fisicas y Naturales, Madrid	3
Sociedad Española de Historia Natural, Madrid	2
SWEDEN	
K. Biblioteket, Stockholm	4
K. Svenska Vetenskapsakademien, Stockholm	6
K. Universitets Biblioteket, Upsala	6
K. Vitterhets Historie och Antikvitets Akademien, Stockholm	2
Svenska Sällskapet för Antropologi och Geografi, Stockholm	1
Swedish Institute of Experimental Forestry, Stockholm	1
SWITZERLAND	
Botanic Garden, Zürich	1
Conservatoire et Jardin Botaniques, Geneva	1
Musée d'Histoire Naturelle, Lausanne	1
Naturforschende Gesellschaft, Basel	1
Naturforschende Gesellschaft, Zürich	2
Ostschweizerische Geograph.-Commerc. Gesellschaft, St. Gallen	1
Société Botanique de Genève	1
Société de Physique et d'Histoire Naturelle, Geneva	2
Société Entomologique, Bern	1
Société Neuchateloise de Géographie	1
URUGUAY	
Archivo General Administrativo, Montevideo (gift)	1
VENEZUELA	
National Library of Venezuela, Caracas (gift)	1
WEST INDIES	
Academia Nacional de Artes y Letras, Havana	2
Biological Station of Bermuda	1

346 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

Imperial Department of Agriculture, Barbadoes	1
Instituto de Segunda Enseñanza, Havana	1
Jamaica Institute, Kingston	1
Trinidad and Tobago Department of Agriculture, Port of Spain	2
Universidad de Habana	2
Balfour, Henry, London	2
Bendrich, Johannes, Dresden	1
Blackman, Aylward M., London	9
Bonaparte, Prince, Paris	2
Carpenter, G. H., Dublin	1
Benedetti, Salvador, Buenos Aires (gift)	1
Desport, Giuseppe, Malta	1
Dunod, H., Paris	1
Giuffrida-Ruggeri, Florence (gift)	1
Gleerup, C. W. K., Lund	1
Heim, Albert, Zürich	1
Hilditch, John, Manchester	8
Huard, V. A., Quebec	1
Janicki, Constantin, St. Croix (gift)	1
Maiden, J. H., Sydney, N. S. W.	1
Pires de Lima, Américo, Porto (gift)	1
Richter, Rudolf, Frankfurt a. M., (gift)	2
Rivet, P., Paris	4
Roth, H. Ling, Halifax, England	4
Torres, Luis Maria, Buenos Aires	1
Voretzsch, E. A., Christiania	1
Wittich, Ernesto, Mexico	1
ALABAMA	
Agricultural Experiment Station, Auburn	1
Alabama Geological Survey, University	1
ARIZONA	
Agricultural Experiment Station, Tucson	2
CALIFORNIA	
Agricultural Experiment Station, Berkeley	1
California Academy of Sciences, San Francisco	3
Cooper Ornithological Club, Hollywood	1
Fish and Game Commission, San Francisco	5
Leland Stanford Junior University, Stanford University	6
Pioneer Western Lumberman, Sacramento	1
Pomona College, Claremont	1
San Diego Society of Natural History	1
Scripps Institution of Biological Research, La Jolla	1
State Board of Forestry, Sacramento	1
State Mining Bureau, Sacramento	3
University of California, Berkeley	16
COLORADO	
Bureau of Mines, Denver	3
Colorado College, Colorado Springs	1

Colorado Museum of Natural History, Denver	1
Colorado School of Mines, Denver	1
Colorado Scientific Society, Denver	1
State Agricultural College, Fort Collins	1
CONNECTICUT	
Agricultural Experiment Station, New Haven	1
American Oriental Society, New Haven	1
Connecticut Academy of Arts and Sciences, New Haven	1
Hartford Public Library	2
Peabody Museum, New Haven	2
State Geological and Natural History Survey, New Haven	2
Wesleyan University, New Haven	1
Yale University, New Haven	2
FLORIDA	
Florida Geological Survey, Tallahassee	1
GEORGIA	
Geological Survey, Atlanta	2
HAWAIIAN ISLANDS	
Agricultural Experiment Station, Honolulu	1
Bernice Pauahi Bishop Museum, Honolulu	3
Board of Commissions of Agriculture and Forestry, Honolulu	2
Hawaiian College, Honolulu	2
Hawaiian Entomological Society, Honolulu	1
IDAHO	
Mining Industry, Boise	1
University of Idaho, Moscow	1
ILLINOIS	
Agricultural Experiment Station, Urbana	1
Armour Institute, Chicago	1
Art Institute of Chicago	2
Chicago Historical Society	4
Chicago Public Library	2
Department of Natural History Survey, Urbana	1
Engineering and Cement World, Chicago (gift)	1
Geographic Society of Chicago	1
Hardwood Record, Chicago (gift)	1
Industrial Survey, Springfield (gift)	1
John Crerar Library, Chicago	1
Lake Forest College	1
Lewis Institute, Chicago	1
Newberry Library, Chicago	2
Northwestern University, Evanston	1
State Academy of Science, Springfield	1
State Board of Agriculture, Springfield	1
State Historical Library, Springfield	2
Sweet, Wallach and Company, Chicago (gift)	1
University of Chicago	4
University of Illinois, Urbana	6
INDIANA	
Agricultural Experiment Station, Lafayette	1

348 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

Purdue University, Lafayette	4
State Board of Forestry, Indianapolis	1
State Entomologist, Indianapolis (gift)	1
University of Notre Dame	1
IOWA	
Geological Survey, Des Moines	2
Iowa State College, Ames	2
Iowa State Horticultural Society, Des Moines	2
University of Iowa, Iowa City	2
KANSAS	
Agricultural Experiment Station, Manhattan	3
Kansas State Historical Society, Topeka	2
State Board of Agriculture, Topeka	1
State Geological Survey, Lawrence	1
LOUISIANA	
Agricultural Experiment Station, Baton Rouge	1
Howard Memorial Library, New Orleans	1
State Museum, New Orleans	1
MAINE	
Agricultural Experiment Station, Orono	1
Bowdoin College, Brunswick	2
Department State Lands and Forestry	1
Portland Public Library	1
Portland Society of Natural History	1
MARYLAND	
Agricultural Experiment Station, College Park	2
Enoch Pratt Free Library, Baltimore	2
Johns Hopkins University, Baltimore	2
Maryland Institute, Baltimore	1
State Board of Forestry, Baltimore	3
MASSACHUSETTS	
Agricultural Experiment Station, Amherst	2
American Academy of Arts and Sciences, Boston	1
American Antiquarian Society, Boston	1
Amherst College	1
Archaeological Institute of America, Boston	1
Boston Museum of Fine Arts	2
Boston Public Library	1
Boston Society of Natural History	1
Clark University, Worcester	1
Essex Institute, Salem	2
Harvard Museum of Comparative Zoölogy, Cambridge	36
Harvard University, Arnold Arboretum, Jamaica Plain	1
Harvard University, Gray Herbarium, Cambridge	2
Horticultural Society, Boston	1
Marine Biological Laboratory, Woods Hole (gift)	1
New Bedford Free Public Library	2
Pan Epirotic Union of America, Boston (gift)	1
Peabody Institute	1
Peabody Museum, Cambridge	1

Peabody Museum, Salem	2
Salem Public Library	2
Springfield City Library Association	1
Springfield Natural History Museum	1
Tufts College, Boston	1
Williams College, Williamstown	2
Worcester County Horticultural Society, Worcester	1

MICHIGAN

Academy of Sciences, Ann Arbor	1
Agricultural Experiment Station, Agricultural College	3
Department of Parks and Boulevards, Detroit	1
Detroit Institute of Art	1
Geological and Biological Survey, Lansing	3
Grand Rapids Public Library	1
Michigan College of Mines, Houghton	1
Michigan State Library, Lansing	1
State Board of Agriculture, Lansing	1
State Board of Library Commissions, Lansing	1
University of Michigan, Ann Arbor	6

MINNESOTA

Agricultural Experiment Station, St. Paul	5
Minneapolis Institute of Fine Arts	1
Minnesota Historical Society, St. Paul	3
University of Minnesota, Minneapolis	7

MISSISSIPPI

Agricultural Experiment Station, Agricultural College	1
State Geological Survey, Jackson (gift)	2

MISSOURI

Agricultural Experiment Station, Columbia	1
Bureau of Geology and Mines, Jefferson City	2
City Art Museum, St. Louis	1
Missouri Botanical Garden, St. Louis	1
Missouri Historical Society, Columbia	2
St. Louis Academy of Sciences	1
St. Louis Natural History Museum Association (gift)	1
St. Louis Public Library	1
St. Louis University	1
State Historical Society, Columbia	1
Washington University, St. Louis	2

MONTANA

State Forester, Helena (gift)	3
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NEBRASKA

Agricultural Experiment Station, Lincoln	1
University of Nebraska, Lincoln	2

NEVADA

Agricultural Experiment Station, Carson City	2
State University, Reno	2

NEW HAMPSHIRE

Forestry Commission, Concord	1
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350 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

NEW JERSEY

Agricultural Experiment Station, Trenton	38
Department of Conservation and Development, Trenton	2
Geological Survey, Trenton	1
Newark Museum Association	2
Princeton University	1
State Museum, Trenton	1
Stevens Institute, Hoboken	1

NEW MEXICO

New Mexico Museum, Santa Fé	1
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NEW YORK

Agricultural Experiment Station, Geneva	3
American Geographical Society, New York City	2
American Hellenic Society, New York City (gift)	1
American Institute of Mining Engineers, New York City	1
American Museum of Natural History, New York City	15
Brooklyn Botanic Garden	3
Brooklyn Institute of Arts and Sciences	3
Carnegie Foundation for the Advancement of Teaching, New York City (gift).	1
Columbia University, New York City	4
Cooper Union for the Advancement of Science and Art, New York City	1
Cornell University, Ithaca	3
Forest and Stream Publishing Company, New York City	1
Inter-American Magazine, New York City (gift)	2
Japan Society, New York City	1
Metropolitan Museum of Art, New York City	2
Museum of the American Indian, New York City	1
New York Academy of Sciences, New York City	1
New York Botanical Garden, New York City	1
New York Historical Society, New York City	1
Pratt Institute Free Library, Brooklyn	1
Public Library, New York City	1
Rochester Academy of Sciences	1
Rockefeller Foundation, New York City	1
State College of Forestry, Syracuse	2
State Library, Albany	1
State Museum, Albany	7
Staten Island Institute of Arts and Sciences, New York City	2
Stone Publishing Company, New York City	1
Zoological Society, New York City	2

NORTH CAROLINA

Elisha Mitchell Scientific Society, Chapel Hill	1
Geological and Economic Survey, Raleigh	1

NORTH DAKOTA

University of North Dakota, University	1
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OHIO

Agricultural Experiment Station, Wooster	2
Cincinnati Museum Association	1
Cleveland Museum of Art	1
Cleveland Public Library	2

Denison University, Granville	I
Geological Survey, Columbus	I
State Archaeological and Historical Society, Columbus	I
State University, Columbus	12
University of Cincinnati	8
Wilson Ornithological Club, Oberlin	I
OREGON	
Agricultural Experiment Station, Corvallis	I
University of Oregon, Eugene	I
PENNSYLVANIA	
American Journal of Pharmacy, Philadelphia	I
American Philosophical Society, Philadelphia	I
Association of Engineering Societies, Philadelphia	I
Bryn Mawr College	I
Carnegie Institute, Pittsburgh	I
Carnegie Library, Pittsburgh	2
Carnegie Museum, Pittsburgh	2
Delaware County Institute of Science, Media	I
Engineers' Society of Western Pennsylvania, Pittsburgh	I
Franklin Institute, Philadelphia	2
Numismatic and Antiquarian Society, Philadelphia	I
Pennsylvania Museum and School of Industrial Art, Philadelphia	I
Philadelphia Academy of Natural Sciences	I
Philadelphia Commercial Museum	I
Sullivant Moss Society, Pittsburgh	16
University of Pennsylvania, Philadelphia	3
University of Pennsylvania Museum, Philadelphia	2
Wagner Free Institute of Science, Philadelphia	I
Wistar Institute of Anatomy and Biology, Philadelphia	20
Wyoming Historical and Geological Society, Wilkes-Barre	I
PHILIPPINE ISLANDS	
Bureau of Education, Manila	I
Department of Agriculture, Manila	I
Department of Interior, Bureau of Science, Manila	6
Department of Public Instruction, Manila	I
RHODE ISLAND	
Agricultural Experiment Station, Kingston (gift)	I
Park Museum, Providence	I
SOUTH CAROLINA	
Charleston Museum	I
SOUTH DAKOTA	
Agricultural Experiment Station, Brookings	I
Geological and Natural History Survey, Vermilion	I
South Dakota School of Sciences, Rapid City	I
TENNESSEE	
State Board of Entomology, Nashville	I
State Geological Survey, Nashville	I
TEXAS	
Agricultural Experiment Station, College Station	I

352 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

VIRGINIA

University of Virginia, Charlottesville	1
Virginia Geological Survey, Charlottesville	2
Virginia State Forester, Charlottesville	2

WASHINGTON

Laboratory of Forest Pathology, Spokane	1
Puget Sound Biological Station, Washington University, Seattle	2
Washington University, Seattle	3
Washington University, Historical Society, Seattle	1

WASHINGTON, D. C.

American Mining Congress	1
Carnegie Endowment for International Peace (gift)	1
Federal Board of Vocational Education, Washington (gift)	1
National Education Association (gift)	2
National Zoological Park	1
Pan American Union	2
United States Government426

WEST VIRGINIA

Agricultural Experiment Station, Morgantown	2
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WISCONSIN

Academy of Sciences, Madison	2
Agricultural Experiment Station, Madison	2
Archaeological Society, Milwaukee	1
Beloit College	1
State Historical Society, Madison	2
State Horticultural Society, Madison	1
University of Wisconsin, Madison	1

WYOMING

Agricultural Experiment Station, Laramie	1
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Arthur, Joseph C., Purdue, Indiana	1
Ayer, Edward B., Chicago (gift)	6
Bergman, H. F., Washington, D. C.	4
Blatchley, W. S., Indianapolis, Indiana	1
Booy, Theodoor de, Yonkers, New York	1
Brandegge, Townshend S., Berkeley, California	1
Cook, Melville T., New Brunswick, New Jersey	4
Detmers, Freda, Columbus, Ohio	1
Eigenmann, Carl H., Bloomington, Indiana	1
Farwell, Oliver A., Detroit, Michigan	7
Gerhard, W. J., Chicago	13
Goldsmith, William M. (gift)	2
Goodspeed, Edgar J. Chicago (gift)	1
Gunsaulus, Dr. F. W. (gift)	3
Hall, Ivan C., Berkeley, California (gift)	5
Harper, Edward T., Geneseo, Illinois (gift)	6
Harris, G. D., Ithaca, New York (gift)	1
Hubbs, Carl L., Chicago . . . . .	.150

Kroeber, A. L., Berkeley, California	1
Laufer, Berthold, Chicago	4
McGregor, E. A., Chapel Hill, North Carolina (gift)	1
Mason, J. Alden, Chicago	3
Millsbaugh, C. F., Chicago	43
Moorehead, Warren K., Andover, Massachusetts	1
Morse, Edward S., Salem, Massachusetts	2
Muttkowski, Richard Anthony, Milwaukee, Wisconsin	1
Nichols, H. W., Chicago	4
Osborn, Henry Fairfield, New York City	4
Penrose, R. A. F., Jr., Philadelphia	1
Roberts, Thomas S., Minneapolis, Minnesota	1
Rowlee, W. W., Ithaca, New York (gift)	4
Slonaker, James R., Palo Alto, California (gift)	2
Strong, R. M., Chicago (gift)	2
Townsend, Charles H., New York City	1
Van Perburgh, Louis, New York City (gift)	1
Van Rippen, Bene, Cambridge	2
Wolcott, A. B., Chicago (gift)	1
Weir, James R., Missoula, Montana (gift)	23

ARTICLES OF INCORPORATION.

STATE OF ILLINOIS.

DEPARTMENT OF STATE.

WILLIAM H. HINRICHSSEN, *Secretary of State.*

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

Whereas, a Certificate duly signed and acknowledged having been filed in the office of the Secretary of State, on the 16th day of September, A. D. 1893, for the organization of the COLUMBIAN MUSEUM OF CHICAGO, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereto attached.

Now, therefore, I, William H. Hinrichsen, Secretary of State of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said COLUMBIAN MUSEUM OF CHICAGO is a legally organized Corporation under the laws of this State.

In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of State. Done at the City of Springfield, this 16th day of September, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the United States the one hundred and eighteenth.

W. H. HINRICHSSEN,
Secretary of State.

[SEAL.]

TO HON. WILLIAM H. HINRICHSSEN,

SECRETARY OF STATE:

SIR:

We, the undersigned citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and that for the purposes of such organization we hereby state as follows, to-wit:

1. The name of such corporation is the "COLUMBIAN MUSEUM OF CHICAGO."

2. The object for which it is formed is for the accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating Art, Archeology, Science and History.

3. The management of the aforesaid museum shall be vested in a Board of FIFTEEN (15) TRUSTEES, five of whom are to be elected every year.

4. The following named persons are hereby selected as the Trustees for the first year of its corporate existence:

Edward E. Ayer, Charles B. Farwell, George E. Adams, George R. Davis, Charles L. Hutchinson, Daniel H. Burnham, John A. Roche, M. C. Bullock, Emil G. Hirsch,

James W. Ellsworth, Allison V. Armour, O. F. Aldis, Edwin Walker, John C. Black and Frank W. Gunsaulus.

5. The location of the Museum is in the City of Chicago, County of Cook, and State of Illinois.

(Signed),

George E. Adams, C. B. Farwell, Sidney C. Eastman, F. W. Putnam, Robert McMurdy, Andrew Peterson, L. J. Gage, Charles L. Hutchinson, Ebenezer Buckingham, Andrew McNally, Edward E. Ayer, John M. Clark, Herman H. Kohlsaat, George Schneider, Henry H. Getty, William R. Harper, Franklin H. Head, E. G. Keith, J. Irving Pearce, Asel F. Hatch, Henry Wade Rogers, Thomas B. Bryan, L. Z. Leiter, A. C. Bartlett, A. A. Sprague, A. C. McClurg, James W. Scott, Geo. F. Bissell, John R. Walsh, Chas. Fitzsimmons, John A. Roche, E. B. McCagg, Owen F. Aldis, Ferdinand W. Peck, James H. Dole, Joseph Stockton, Edward B. Butler, John McConnell, R. A. Waller, H. C. Chatfield-Taylor, A. Crawford, Wm. Sooy Smith, P. S. Peterson, John C. Black, Jno. J. Mitchell, C. F. Gunther, George R. Davis, Stephen A. Forbes, Robert W. Patterson, Jr., M. C. Bullock, Edwin Walker, George M. Pullman, William E. Curtis, James W. Ellsworth, William E. Hale, Wm. T. Baker, Martin A. Ryerson, Huntington W. Jackson, N. B. Ream, Norman Williams, Melville E. Stone, Bryan Lathrop, Eliphalet W. Blatchford, Philip D. Armour.

STATE OF ILLINOIS }
COOK COUNTY } ss.

I, G. R. MITCHELL, a NOTARY PUBLIC in and for said County, do hereby certify that the foregoing petitioners personally appeared before me and acknowledged severally that they signed the foregoing petition as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this 14th day of September, 1893.

G. R. MITCHELL,

[SEAL.]

NOTARY PUBLIC, COOK COUNTY, ILL.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the corporate members held the 25th day of June, 1894, the name of the COLUMBIAN MUSEUM was changed to FIELD COLUMBIAN MUSEUM. A certificate to this effect was filed June 26, 1894, in the office of the Secretary of State for Illinois.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the corporate members held the 8th day of November, 1905, the name of the FIELD COLUMBIAN MUSEUM was changed to FIELD MUSEUM OF NATURAL HISTORY. A certificate to this effect was filed November 10, 1905, in the office of the Secretary of State for Illinois.

AMENDED BY-LAWS.

(JUNE 12, 1916.)

ARTICLE I.

MEMBERS.

SECTION 1. Members shall be of five classes, Annual Members, Corporate Members, Life Members, Patrons and Honorary Members.

SEC. 2. Annual Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of ten dollars (\$10.00), payable within thirty days after notice of election, and within thirty days after each recurring annual date. The failure of any person to make such initiatory payment and such annual payments within said time shall, at the option of the Board of Trustees, be sufficient grounds for the forfeiture of an annual membership.

This said annual membership shall entitle the member to:

First.— Free admittance for the member and family, to the Museum on any day.

Second.— Ten tickets every year, admitting the bearer to the Museum on pay days.

Third.— A copy of all publications of the Museum when requested.

Fourth.— Invitations to all special exhibits, receptions, lectures, or other functions which may be given at the Museum.

SEC. 3. The Corporate Members shall consist of the persons named in the articles of incorporation, and of such other persons as shall be chosen from time to time by the Board of Trustees at any of its meetings, upon the recommendation of the Executive Committee; provided, that such persons named in the articles of incorporation shall, within ninety days from the adoption of these By-Laws, and persons hereafter chosen as Corporate Members shall, within ninety days of their election, pay into the treasury the sum of twenty dollars (\$20.00) or more. The failure of any person to make such payment within said time, shall, at the option of the Board of Trustees, be ground for forfeiture of his corporate membership. Corporate Members becoming Life Members, Patrons or Honorary Members shall be exempt from dues. Annual meetings of said Corporate Members shall be held at the same place and on the same day that the annual meeting of the Board of Trustees is held.

SEC. 4. Any person paying into the treasury the sum of five hundred dollars (\$500.00), at any one time, shall, upon the unanimous vote of the Board, become a Life Member. Life Members shall be exempt from all dues.

SEC. 5. Patrons shall be chosen by the Board upon recommendation of the Executive Committee from among persons who have rendered eminent service to

the Museum. They shall be exempt from all dues, and, by virtue of their election as Patrons, shall also be Corporate Members.

SEC. 6. Honorary Members shall be chosen by the Board from among persons who have rendered eminent service to science, and only upon unanimous nomination of the Executive Committee. They shall be exempt from all dues.

ARTICLE II.

BOARD OF TRUSTEES.

SECTION 1. The Board of Trustees shall consist of fifteen members. The respective members of the Board now in office, and those who shall hereafter be elected, shall hold office during life. Vacancies occurring in the Board shall be filled at a regular meeting of the Board, upon the nomination of the Executive Committee made at a preceding regular meeting, by a majority vote of the members of the Board present.

SEC. 2. Regular meetings of the Board shall be held on the second Monday of each month. Special meetings may be called at any time by the President, and shall be called by the Secretary upon the written request of three Trustees. Five Trustees shall constitute a quorum, except for the election of officers or the adoption of the Annual Budget, when seven Trustees shall be required, but meetings may be adjourned by any less number from day to day, or to a day fixed, previous to the next regular meeting.

SEC. 3. Reasonable written notice, designating the time and place of holding meetings, shall be given by the Secretary.

ARTICLE III.

HONORARY TRUSTEES.

SECTION 1. As a mark of respect, and in appreciation of services performed for the Institution, those Trustees who by reason of inability, on account of change of residence, or for other cause or from indisposition to serve longer in such capacity shall resign their place upon the Board, may be elected, by a majority of those present at any regular meeting of the Board, an Honorary Trustee for life. Such Honorary Trustee will receive notice of all meetings of the Board of Trustees, whether regular or special, and will be expected to be present at all such meetings and participate in the deliberations thereof, but an Honorary Trustee shall not have the right to vote.

ARTICLE IV.

OFFICERS.

SECTION 1. The officers shall be a President, a First Vice-President, a Second Vice-President, a Secretary, an Assistant Secretary and a Treasurer. They shall be chosen by ballot by the Board of Trustees, a majority of those present and voting being necessary to elect. The President, the First Vice-President, and the Second Vice-President shall be chosen from among the members of the Board of Trustees. The meeting for the election of officers shall be held on the second Monday of January of each year, and shall be called the Annual Meeting.

SEC. 2. The officers shall hold office for one year, or until their successors are elected and qualified, but any officer may be removed at any regular meeting of the

Board of Trustees by a vote of two-thirds of all the members of the Board. Vacancies in any office may be filled by the Board at any meeting.

SEC. 3. The officers shall perform such duties as ordinarily appertain to their respective offices, and such as shall be prescribed by the By-Laws, or designated from time to time by the Board of Trustees.

ARTICLE V.

THE TREASURER.

SECTION 1. The Treasurer shall be custodian of the funds of the Corporation except as hereinafter provided. He shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents. But no warrants shall be issued, except in conformity with a regularly prepared voucher, giving the name of the payee and stating the occasion for the expenditure, and verified and approved as hereinafter prescribed. It shall be no part of the duties of the Treasurer to see that the warrants have been issued in conformity with such vouchers.

SEC. 2. The securities and muniments of title belonging to the corporation shall be placed in the custody of some Trust Company of Chicago to be designated by the Board of Trustees, which Trust Company shall collect the income and principal of said securities as the same become due, and pay same to the Treasurer, except as hereinafter provided. Said Trust Company shall allow access to and deliver any or all securities or muniments of title to the joint order of the following officers, namely: The President or one of the Vice-Presidents, jointly with the Chairman, or one of the Vice-Chairmen, of the Finance Committee of the Museum.

SEC. 3. The Treasurer shall give bond in such amount, and with such sureties as shall be approved by the Board of Trustees.

SEC. 4. All vouchers executed for the payment of liabilities incurred in the administration of the Museum, shall be verified by the Auditor, and approved for payment by the Director, and the Chairman of the Administration Committee. All vouchers executed for expenditures for the construction or reconstruction of the Museum building, or buildings, shall be verified by the Auditor and approved for payment by the Chairman of the Building Committee. All vouchers executed in connection with the investments of the Corporation, or, in any way having to do with the endowment funds of the Corporation, shall be verified by the Auditor and approved for payment by the Chairman of the Finance Committee.

SEC. 5. The Harris Trust and Savings Bank of Chicago shall be Custodian of "The N. W. Harris Public School Extension of Field Museum" fund. The Bank shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents. But no warrant shall be issued, except in conformity with a regularly prepared voucher, giving the name of the payee and stating the occasion for the expenditure, and verified and approved by the Auditor, the Director and Chairman of the Administration Committee. It shall be no part of the duties of the said Custodian to see that the warrants have been issued in conformity with such vouchers.

ARTICLE VI.

THE DIRECTOR.

SECTION 1. The Board of Trustees shall elect a Director of the Museum, who shall remain in office until his successor shall be elected. He shall have immediate charge and supervision of the Museum, and shall control the operations of the institution, subject to the authority of the Board of Trustees and its Committees. The Director shall be the official medium of communication between the Board, or its Committees, and the scientific staff and maintenance force.

SEC. 2. There shall be four scientific departments of the Museum — Anthropology, Botany, Geology and Zoölogy, each under the charge of a Curator, subject to the authority of the Director. The Curators shall be appointed by the Board upon the recommendation of the Director, and shall serve during the pleasure of the Board. Subordinate staff officers in the scientific departments shall be appointed and removed by the Director upon the recommendation of the Curators of the respective Departments. The Director shall have authority to employ and remove all other employees of the Museum.

SEC. 3. The Director shall make report to the Board at each regular meeting, recounting the operations of the Museum for the previous month. At the Annual Meeting, the Director shall make an Annual Report, reviewing the work of the Museum for the previous year, which Annual Report shall be published in pamphlet form for the information of the Trustees and Members, and for free distribution in such number as the board may direct.

ARTICLE VII.

AUDITOR.

SECTION 1. The Board shall appoint an Auditor, who shall hold his office during the pleasure of the Board. He shall keep proper books of account, setting forth the financial condition and transactions of the Corporation, and of the Museum, and report thereon at each regular meeting, and at such other times as may be required by the Board. He shall certify to the correctness of all vouchers for the expenditure of the money of the corporation.

ARTICLE VIII.

COMMITTEES.

SECTION 1. There shall be six Committees as follows: Finance, Building, Auditing, Pension, Administration and Executive.

SEC. 2. The Finance, Auditing and Pension Committees shall each consist of three members, and the Building and Administration Committees shall each consist of five members. All members of these five Committees shall be elected by ballot by the Board at the Annual Meeting, and shall hold office for one year, and until their successors are elected and qualified. In electing the members of these Committees, the Board shall designate the Chairman and Vice-Chairman by the order in which the members are named in the respective Committee; the first member named shall be Chairman, the second named the Vice-Chairman, and the third named, Second Vice-Chairman, succession to the Chairmanship being in this order in the event of the absence or disability of the Chairman.

SEC. 3. The Executive Committee shall consist of the President of the Board, the Chairman of the Finance Committee, the Chairman of the Building Committee,

the Chairman of the Administration Committee, the Chairman of the Auditing Committee, the Chairman of the Pension Committee, and two other members of the Board to be elected by ballot at the Annual Meeting.

SEC. 4. Four members shall constitute a quorum of the Executive Committee; three members shall constitute a quorum of the Administration Committee, and in all other standing Committees, two members shall constitute a quorum. In the event that, owing to the absence or inability of members, a quorum of the regularly elected members cannot be present at any meeting of any Committee, then the Chairman thereof, or his successor, as herein provided, may summon any member of the Board of Trustees to act in place of the absentee.

SEC. 5. The Finance Committee shall have supervision of investing the endowment and other permanent funds of the Corporation, and the care of such real estate as may become its property. It shall have authority to invest, sell, and re-invest funds, subject to the approval of the Board.

SEC. 6. The Building Committee shall have supervision of the construction, reconstruction, and extension of any and all buildings used for Museum purposes.

SEC. 7. The Executive Committee shall be called together from time to time as the Chairman may consider necessary, or as he may be requested to do by three members of the Committee, to act upon such matters affecting the administration of the Museum as cannot await consideration at the Regular Monthly Meetings of the Board of Trustees. It shall, before the beginning of each fiscal year, prepare and submit to the Board an itemized Budget, setting forth the probable receipts from all sources for the ensuing year, and make recommendations as to the expenditures which should be made for routine maintenance and fixed charges. Upon the adoption of the Budget by the Board, the respective Committees shall be considered as authorized to make the expenditures detailed therein. No increase in the expenditures under any items of the Budget shall be made, except by authority of the Board of Trustees, but the Executive Committee shall have authority, in cases of emergency, to expend a further total sum not exceeding two thousand dollars in any one month.

SEC. 8. The Administration Committee shall have general supervision of the affairs of the Museum. The Committee shall hold one meeting each month with the Director at the Museum within a week preceding each Monthly Meeting of the Board of Trustees.

SEC. 9. The Auditing Committee shall have supervision over all accounting and bookkeeping, and full control of the financial records. It shall cause the same, once each year, or oftener, to be examined by an expert individual or firm, and shall transmit the report of such expert individual or firm to the Board at the next ensuing regular meeting after such examination shall have taken place.

SEC. 10. The Pension Committee shall determine by such means and processes as shall be established by the Board of Trustees to whom and in what amount the Pension Fund shall be distributed. These determinations or findings shall be subject to the approval of the Board of Trustees.

SEC. 11. The Chairman of each Committee shall report the acts and proceedings thereof at the next ensuing regular meeting of the Board.

SEC. 12. The President shall be ex-officio a member of all Committees and Chairman of the Executive Committee. Vacancies occurring in any Committee may be filled by ballot at any regular meeting of the Board.

ARTICLE IX.**NOMINATING COMMITTEE.**

SECTION 1. At the November meeting of the Board, each year a Nominating Committee of three shall be chosen by lot. Said Committee shall make nominations for membership of the Finance Committee, the Building Committee, the Administration Committee, the Auditing Committee, and the Pension Committee, and for two members of the Executive Committee, from among the Trustees, to be submitted at the ensuing December meeting and voted upon at the following Annual Meeting in January.

ARTICLE X.

SECTION 1. Whenever the word "Museum" is employed in the By-Laws of the Corporation, it shall be taken to mean the building in which the Museum as an Institution is located and operated, the material exhibited, the material in study collections, or in storage, furniture, fixtures, cases, tools, records, books, and all appurtenances of the Institution, and the workings, researches, installations, expenditures, field work, laboratories, library, publications, lecture courses, and all scientific and maintenance activities.

SEC. 2. These By-Laws may be amended at any regular meeting of the Board of Trustees by a two-thirds vote of all the members present, provided the amendment shall have been proposed at a preceding regular meeting.

HONORARY MEMBERS.

EDWARD E. AYER	CHARLES B. CORY
MRS. TIMOTHY B. BLACKSTONE	STANLEY FIELD
STANLEY McCORMICK	

DECEASED.

HARLOW N. HIGINBOTHAM

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EDWARD B. BUTLER	CHARLES H. MARKHAM
ALFRED M. COLLINS	JOHN S. MILLER
LEE GARNETT DAY	JOHN BARTON PAYNE
ERNEST R. GRAHAM	HOMER E. SARGENT
FRANK W. GUNSAULUS	JAMES SIMPSON
CHARLES L. HUTCHINSON	FREDERICK J. V. SKIFF
VERNON SHAW KENNEDY	WILLARD A. SMITH
JOHN P. WILSON	

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ALDIS, OWEN F.
ARMOUR, ALLISON V.
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BARTLETT, A C.
BLAIR, WATSON F.
BUTLER, EDWARD B.
CHALMERS, W. J.
CHATFIELD-TAYLOR, H. C.
COLLINS, ALFRED M.
CRANE, RICHARD T.
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EASTMAN, SIDNEY C.
ELLSWORTH, JAMES W.
FIELD, MARSHALL
FIELD, STANLEY
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GETTY, HENRY H.
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GUNTHER, C. F.
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JONES, ARTHUR B.
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SMITH, WILLARD A.
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WILSON, JOHN P.
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DECEASED, 1919.

HIGINBOTHAM, H. N.

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ALDIS, OWEN F.
ALLEN, BENJAMIN
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 WILSON, M. H.
 WORCESTER, MRS. C. H.

DECEASED.

SEIPP, MRS. C.

JUN 15 1921.

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FIELD MUSEUM OF NATURAL HISTORY.

PUBLICATION 206.

REPORT SERIES.

VOL. V, No. 6.

ANNUAL REPORT OF THE DIRECTOR

TO THE

BOARD OF TRUSTEES

FOR THE YEAR 1920.



CHICAGO, U. S. A.

January, 1921.

FIELD MUSEUM OF NATURAL HISTORY.

PUBLICATION 206.

REPORT SERIES.

VOL. V, No. 16.

ANNUAL REPORT OF THE
DIRECTOR

TO THE

BOARD OF TRUSTEES

FOR THE YEAR 1920.



CHICAGO, U. S. A.

January, 1921.

BEQUESTS.

Bequests to Field Museum of Natural History may be made in securities, money, books or collections. For those desirous of making bequests to the Museum, the following form is suggested:

FORM OF BEQUEST.

I do hereby give and bequeath to "FIELD MUSEUM OF NATURAL HISTORY" of the City of Chicago, State of Illinois, _____

Cash Contributions made within the taxable year to Field Museum of Natural History to an amount not in excess of 15% of the tax payer's net income are allowable as deductions in computing net income under the Revenue Law.

CONTENTS.

Board of Trustees	372
Officers and Committees	373
Staff of Museum	374
Report of the Director	375
Maintenance	378
Moving Operations	378
Publications.....	379
Library	379
Cataloguing, Inventorying, and Labeling.....	381
Accessions	382
Expeditions and Field Work.....	386
Installation and Permanent Improvement	386
The N. W. Harris Public School Extension	400
Photography and Illustration.....	402
Printing.....	402
Attendance.....	403
Balance Sheet	404
List of Accessions	411
Department of Anthropology.....	411
Department of Botany.....	412
Department of Geology	413
Department of Zoology	414
Section of Photography	415
The Library.....	415
Articles of Incorporation	427
Amended By-Laws.....	429
List of Honorary Members and Patrons.....	435
List of Corporate Members.....	436
List of Life Members	437
List of Annual Members	440

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STANLEY FIELD.
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OWEN F. ALDIS.

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MARTIN A. RYERSON, *First Vice-President.*

WATSON F. BLAIR, *Second Vice-President.*

FREDERICK J. V. SKIFF, *Secretary.*

D. C. DAVIES, *Assistant Secretary and Auditor.*

SOLOMON A. SMITH, *Treasurer.*

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STANLEY FIELD.

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WATSON F. BLAIR.

WILLIAM J. CHALMERS.

MARSHALL FIELD.

ARTHUR B. JONES.

GEORGE MANIERRE.

ALBERT A. SPRAGUE.

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ARTHUR B. JONES.

MARTIN A. RYERSON.

BUILDING COMMITTEE.

WILLIAM J. CHALMERS.

FREDERICK J. V. SKIFF.

CYRUS H. McCORMICK.

ALBERT A. SPRAGUE.

SUB-COMMITTEE OF BUILDING COMMITTEE.

STANLEY FIELD.

ALBERT A. SPRAGUE.

FREDERICK J. V. SKIFF.

AUDITING COMMITTEE.

GEORGE MANIERRE.

ARTHUR B. JONES.

ADMINISTRATION COMMITTEE.

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WATSON F. BLAIR.

FRANK W. GUNSAULUS.

GEORGE MANIERRE.

CHAUNCEY KEEP.

PENSION COMMITTEE.

ARTHUR B. JONES.

ALBERT A. SPRAGUE.

FREDERICK J. V. SKIFF.

STAFF OF THE MUSEUM.

DIRECTOR.

FREDERICK J. V. SKIFF.

DEPARTMENT OF ANTHROPOLOGY.

BERTHOLD LAUFER, *Curator.*

CHARLES L. OWEN, *Assistant Curator Division of Archaeology.*

FAY COOPER COLE, *Assistant Curator Physical Anthropology
and Malayan Ethnology.*

ALBERT B. LEWIS, *Assistant Curator of African and Melanesian
Ethnology.*

J. ALDEN MASON, *Assistant Curator of Mexican and South
American Archaeology.*

HELEN C. GUNSAULUS, *Assistant Curator of Japanese
Ethnology.*

DEPARTMENT OF BOTANY.

CHARLES F. MILLSPAUGH, *Curator.*

B. E. DAHLGREN, *Assistant Curator Economic Botany.*

EDWARD T. HARPER, *Assistant Curator of Cryptogamic Botany.*

DEPARTMENT OF GEOLOGY.

OLIVER C. FARRINGTON, *Curator.* H. W. NICHOLS, *Assistant Curator.*

ELMER S. RIGGS, *Assistant Curator of Paleontology.*

DEPARTMENT OF ZOÖLOGY.

CHARLES B. CORY, *Curator.*

WILFRED H. OSGOOD, *Assistant Curator of Mammalogy and Ornithology.*

WILLIAM J. GERHARD, *Assistant Curator of Entomology.*

EDMOND N. GUERET, *Assistant Curator of Osteology.*

R. MAGOON BARNES, *Assistant Curator of Oölogy.*

ALFRED C. WEED, *Assistant Curator of Ichthyology and Herpetology.*

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION.

S. C. SIMMS, *Curator.*

RECORDER.

D. C. DAVIES.

ASSISTANT RECORDER.

BENJ. BRIDGE.

THE LIBRARY.

ELSIE LIPPINCOTT, *Librarian.*

EMILY M. WILCOXSON, *Assistant Librarian.*

January 1, 1921.

ANNUAL REPORT OF THE DIRECTOR.

1920

To the Trustees of Field Museum of Natural History:

I have the honor to present a report of the operations of the Museum for the year ending December 31, 1920.

In every respect the year just closed must be considered as the most important and momentous in the history of the organization. The completion of the New Building, with the exception of the terrace, approximately five years from the date when construction operations were inaugurated, and its occupancy are two factors which make the period not alone noteworthy, but also establish a new epoch in the dissemination of scientific knowledge. The Building may be said to have been completed on or about June 1, 1920, but the transfer by rail of the collections and equipment commenced on the 26th day of April and was practically concluded by June 4th. The actual moving operations by railroad thus consumed thirty-four working days. The plans for moving and the organization for carrying on the task had been given careful consideration before work was begun and it is a matter of congratulation that the undertaking was carried through to its consummation without an untoward occurrence of any nature and without serious damage to the material transported. As it was thought advisable to move the heavier objects by motor trucks, this method of transfer was inaugurated early in March and continued with few interruptions daily until the beginning of September. In all 354 loads were handled in this manner and these were carried with the same satisfactory result as the loads transported by railroad. As soon as moving operations were concluded, installation was immediately undertaken as reviewed elsewhere in this report. It may be said at this date that fully one-third of the exhibition cases in the Museum have been finally placed, reinstalled and in a great many instances entirely relabeled. There is every indication that the entire exhibition area will be completely installed on or about the first of May 1921, when it is intended that the Museum shall be re-opened to the public.

During the year the President of the Museum, Mr. Stanley Field, contributed the sum of \$100,000.00 toward the deficit in the New

Building Fund. The Board of Trustees in accepting this very generous gift, expressed their appreciation with more than ordinary emphasis.

It is a pleasure also to announce that a contribution of \$50,000.00 in the form of 500 shares of 7% preferred stock has been made by Mr. Edward E. Ayer, the income of which after the death of Mrs. Ayer and the donor is to be expended for the purchase of scientific books, pamphlets and publications for the general Library of the Museum. This provision for the future development of the Museum Library is only another instance of Mr. Ayer's life-long devotion and generosity to the Museum. In view of the continued interest manifested by Mr. Ayer in the expansion of the Library and especially on account of his contributions in money and books to the ornithological section, it has been decided to name the ornithological Library of the Museum the "Edward E. Ayer Ornithological Library."

Grateful acknowledgment is made of the contribution of the sum of \$20,000.00 from the Honorable Charles R. Crane, or so much thereof as may be necessary to complete the publication of the work being prepared by the Curator of Zoölogy on "The Birds of the Americas."

The additions to the scientific staff and maintenance forces during the latter part of the year, having caused a deficit in the available funds for the operation of the Museum, amounting to \$19,755.32, at the December meeting of the Board, the President announced that Mr. Marshall Field had volunteered to assume this deficit.

President Field has further contributed the sum of \$1,000.00 toward the publication of a "Record of the Life of the North American Indian," which is to consist of twenty volumes of text and illustrations and twenty accompanying portfolios of copper plates and photogravures, with the understanding that the Museum Library is to receive a set of the work when completed.

The Corporate Members at a meeting held in May, decided to amend the Articles of Incorporation, so as to provide for an increase in the Board of Trustees of the Museum from fifteen to twenty-one members. At this date four of the created vacancies have been filled by the election of Mr. John Borden, Mr. Albert W. Harris, Mr. Solomon A. Smith and Mr. James Simpson.

Through the further efforts of President Field to increase the Life Memberships of the Institution, the following were elected during the year: J. B. Lord, Thomas W. Hinde, Adolph Nathan, George D. McLaughlin, Lawrence M. Viles, D. W. Buchanan, Frank O. Wetmore, Alexander Smith, David M. Yates, Clifford M. Leonard, Frank W. Porter, Charles H. Schweppe, William Wrigley, Jr., Charles Piez, James B. Forgan, John McKinlay, Potter Palmer, Francis S. Peabody,

Charles H. Morse, Jr., George Alexander McKinlock, John C. Shaffer, Dorr E. Felt, A. Watson Armour, Theodore C. Keller, E. D. Hulbert, Frank S. Cunningham, Henry W. Farnum, B. E. Sunny, John Barton Payne, Honore Palmer, Alfred Decker, David R. Forgan, George F. Getz, Clarence M. Woolley, John Burnham, Augustus S. Peabody, Samuel M. Hastings, P. D. Block, Joseph H. Defrees, Arthur T. Aldis, John F. Jelke, E. J. Lehmann, George L. Veatch, Eugene B. Clark, Oliver T. Wilson, Norman Bridge, W. H. Miner, Clive Runnells, N. Landon Hoyt, William P. Martin, Robert Stuart, Robert W. Stewart, Henry P. Crowell, Gustavus S. Fernald and William E. Clow.

Mr. James Simpson was elected a Patron of the Museum, in recognition of the eminent service he has rendered to the Institution.

Amendments to the By-Laws made during the year have created two new classes of memberships, Associate Members and Sustaining Members, and have also provided additional privileges for all classes of memberships. These privileges are indicated in the revised By-Laws which will be found in this report. In this connection also, an agreement has been entered into with other contemporary institutions for an interchange of courtesies and privileges for Life and Annual Members.

The Board of Trustees had presented for their consideration during the year a proposal from the South Park Commissioners, asking the consent of the Trustees to the erection by the Commissioners of a Stadium, which it is proposed to construct on the south side of the Museum building and which would encroach one hundred and twenty feet, approximately, upon the restricted areas, which under the terms of the contract between the Museum Trustees and the South Park Commissioners providing a site for the Museum building, it was agreed should remain free of structures unless otherwise concurred in by the Museum. After full consideration of the request, the Trustees gave their consent to the construction of the Stadium as shown on the plans submitted.

The ordinance under which the South Park Commissioners set aside a tract of land in Grant Park for the site of the new building, in consideration of which dedication the Institution is to be open free to the public three days in each week, having been brought to the attention of the Board of Trustees, it was decided that the Museum should be open free to the public on Thursdays, Saturdays and Sundays.

During the year arrangements were made with the Illinois Central Railroad to construct a foot-bridge over the tracks of the railroad at Park Row which would permit foot passage from the Park Row station platform, or from the Park just outside of the retaining walls east and west of the tracks, the Museum to assume the cost of the structure.

This bridge has been completed and has greatly increased the means of access to the Museum.

The scope of the Stanley Field Museum Employees Pension Fund has been enlarged by its founder, the execution of an insurance contract with the Aetna Insurance Company covering the lives of the personnel of the Museum, with the premium paid out of this Fund, having been authorized. In this contract it is stipulated that continuous service for one complete year is pre-requisite to securing any insurance and that the insurance automatically ceases upon the termination of the services of the insured. Employees, who on February 1, 1920, had not been in the service of the Museum for one complete year, automatically become insured at the conclusion of that period, and are progressively entitled to increasing benefits as set forth in the schedule adopted. This insurance is without cost to the insured and imposes no obligation not already attending the services of the employee.

MAINTENANCE.—The sum of \$170,200.00 was appropriated by the Board of Trustees for the necessary expenses of maintenance during the fiscal year. The cost of maintenance, however, amounted to approximately \$190,000.00, thus creating a deficit of approximately \$20,000, which, as referred to elsewhere in this report, was contributed by Mr. Marshall Field.

MOVING OPERATIONS.—The following is a brief summary of the extent and cost of the transfer of all collections, material and equipment from the old building in Jackson Park to the new building in Grant Park.

Time:

Duration of transportation by rail, April 26, 1920, to June 4, 1920, inclusive, omitting Sundays and one holiday	34 days
Duration of transportation by auto truck (capacity five ton), March 3, 1920, to October 2, 1920 (not continuous)	132 days

Quantities:

Number of freight cars loaded and unloaded	321
Number of motor truck loads (loaded and unloaded)—capacity 5 tons	354
Glazed and unglazed exhibition cases moved—average size twelve feet in length and eight feet in height	1,727
Number of cases “knocked-down” and partly dismantled	98

Number of boxes, crates, barrels, packages, and other parcels specially prepared for transporting . . .	11,645
Office furniture and effects, books and publications in carriers, maintenance equipment, photographic equipment, printing shop equipment, pieces and objects .	8,006

Cost:

Cost of packing supplies, covering a period of two years \$	4,897.52
Total cost of moving operations not to exceed—(some unrendered bills estimated)	70,000.00

Damage:

Repairing material damaged in actual transit . . .	1,250.00
Repairing material damaged during packing operations including the replacing of all broken glass	2,800.00

Remarks:

The plan of the operation provided placing the cases and objects transported upon a definite floor area or in a particular room or a designated section, where it is intended they shall remain in the new building.

The number of checkers employed at loading platform at old building and at unloading platform at new building 11

(All volunteered from the personnel of the Museum)

Comparison of the loading sheets with the unloading sheets both by rail and truck, shows not one article or object has apparently been lost or misplaced in the process of the transfer.

Estimated cost of glass moved, at present day prices \$753,000.00

PUBLICATIONS.—During the year one publication was issued, detail of which follows:

Pub. 205.—Report Series, Vol. 5, No. 5. Annual Report of the Director for the year 1919. January 1920. 69 pages, 14 halftones, edition 2,000.

THE LIBRARY.—Notwithstanding the limitations that existing conditions have imposed, the customary activities of the Library have been carried on with a fair measure of success. There have been received by gift, exchange and purchase 1,088 books and pamphlets. The Library contains 73,824 books and pamphlets. Cards written and filed in the catalogues number 6,690. The transfer of the contents of the library to the new building was accomplished by using cartons, large wooden containers and motor trucks. The space at present assigned

to the office of the Library and the stack room is on the second floor. The four departmental libraries are located on the third floor in rooms adjoining each of the departments. The task of installing the exhibition halls has employed all assistance available and the work of shelving the libraries is in abeyance until the stack rooms can be completed when considerable time and labor will be necessary to reestablish the sequence of the original classification. The decision to have all literature pertaining to the work of the departments placed in their respective libraries necessitates a number of transfers and until these transfers are effected and inventories taken it is not possible to accurately state the number of books and pamphlets in each library. The books of the anthropological and botanical departments have been placed on the shelves. In the Department of Anthropology discarded exhibition cases were converted into book cases and used to good advantage. The library's generous patron, Mr. Edward E. Ayer, presented the rare eight volume edition of Audubon's *Birds of North America*. During the year Mr. Ayer caused to be ordered one hundred and fourteen volumes of ornithological works. Of these eighty-one volumes have been received, a number of which are rare copies dating back to 1776, and all are beautifully illustrated. A catalogue of all the ornithological works in the library is in preparation, at the request of Mr. Ayer, who has expressed a desire to supplement his already splendid collection until it provides workers and students with as complete an ornithological reference library as is obtainable. Gifts, gratefully received from other sources, are acknowledged as such in the list of accessions appended to the report. Exchanges were received from four hundred and ninety-six institutions and individuals. The first consignment of the publications of the Museum, since pre-war days, was forwarded during the year to all countries where international exchange service has been resumed. The continued upward trend of the cost of all publications very seriously affects scientific literature. Various societies that have existed mainly for the publication of the results of scientific research have had to either suspend publishing for the time being or discontinue exchange relations and ask for subscriptions to enable them to continue their work. Five new exchanges were effected with the following: Federated Malay States Museums, Kuala Lumpur; Museo de Etnología y Antropología de Chile, Santiago de Chile; Ornithological Society of Japan, Tokyo; Manchester Geographical Society of England; R. Academia de Ciencias y Artes, Barcelona. Comparatively few purchases of books have been made as the time of the staff has been wholly occupied with installation work. Subscriptions were entered for seventy-eight periodicals.

DEPARTMENTAL CATALOGUING, INVENTORING, AND LABELING.—During the year the work of cataloguing in the Department of Anthropology has been carried on as new accessions were acquired. In the division of Mexican and South American archaeology, the remainder of the Zavaleta collection, as well as the material from Ecuador and the West Indies received last year, as an exchange, from the Museum of the American Indian, New York, has been catalogued. The total number of catalogue cards prepared amounts to 1,646. These cards are distributed over the divisions as follows: Southwest, Mexican and South American Archaeology 1,501; North American Ethnology 4; Malayan Ethnology 118; China, Japan and India 16; Near East Archaeology and Ethnology 3; and African Ethnology 4. These cards have been entered in the inventory books of the Department, which now number thirty-eight. The number of annual accessions amounts to twenty, eighteen of which have been entered. The total number of catalogue cards entered from the opening of the first volume amounts to 155,194. A new and vigorous campaign in label writing and printing was inaugurated during the last months of the year. The progress made so far has been entirely satisfactory, numerous new labels having been added to the exhibition cases. The total number of these labels amounts to 4,139, distributed as follows: North West Coast 96; New Guinea 870; Mexico and South America 2,316; Philippines 173; China, Tibet and Korea 442; Ainu and Siberia 239; Japan 3. There were 393 new label cards added to the label file. The printer supplied the department with 975 catalogue cards.

As very little new material has been added to the organized collections in the Department of Botany during the year, on account of the necessities contingent upon moving, only 231 incidental entries have been made in the department catalogues, bringing the total entries up to 482,310. The card indices of the department have been augmented as follows:

	No. of Cards	
	Augmented 1920	Total
Index to Botanical Species	4,585	156,618
Index to Common Names	76	20,375
Index to Yucatan Plants	5	6,367
Index to Euphorbiae	7	4,232
Index to Department Labels	36	3,136
Index to Geographic Localities	11	2,767
Index to Collectors	2	9,864
Index to Botanical Titles	75	1,575
Index to Department Library . . . . .	.....	8,800
Index to Illinois Flora	110	910
Index to Hand Specimens of Wood	1,646	2,446
Index to Installations . . . . .	.....	595
Index to Photographs . . . . .	.....	600

All accessions in the Department of Geology have been fully catalogued as received, the largest number appended being obtained by the addition of the specimens of the Frederick J. V. Skiff collection. In packing or installing the older collections specimens occasionally were found which had been overlooked in previous cataloguing, and the opportunity was improved to record these also. The total number of entries made during the year was 452. During the installation of the cases in the new building, all missing or soiled labels have been replaced as fast as the cases were installed, by new ones. As considerable care was taken in packing the labels from the old installation so that loss or injury should be avoided, the instances where such labels needed replacement were fortunately few. New labels were also provided for any specimens added that had not previously been installed, and the form, wording or size of some of the old labels was changed in instances where this seemed desirable. The total number of re-installed cases completely labeled during the year is 70 and the total number of new labels that have been prepared is 668.

• Cataloguing in the Department of Zoölogy during the year was reduced to that which was absolutely necessary, namely 43 entries in Mammalogy and 247 in Ornithology. Many exhibition labels have been prepared, including an entirely new set for the large habitat groups of mammals.

The following table shows the work performed on catalogues and inventorying accomplished:

	No. of Record Books	Total No. of Entries to Dec. 31, 1920	Entries During 1920	Total No. of Cards Written
Department of Anthropology.....	38	155,194	1,646	155,334
Department of Botany.....	58	482,310	234	87,409
Department of Geology.....	22	141,472	452	8,456
Department of Zoölogy.....	40	101,304	290	34,696
The Library.....	14	117,766	6,690	283,716
Section of Photography.....	20	121,239	395	.....

ACCESSIONS.—The most notable gift of the year in the Department of Anthropology is the valuable collection of Indian baskets from British Columbia and California made by Mr. Homer E. Sargent in the course of fifteen years and presented by him to the Museum. The present contribution of 342 baskets is merely the first installment; there are several hundred more to come by next spring. This extensive collection comprises excellent and partially old specimens from the Hupa, Pomo, Paiute, Panamint, Maidu, Mono, Chumashan, Diegeno, Chemehuevi, Navaho, and other tribes. Mr. Edward E. Ayer presented to the department a kris from the Moro on the Philippines, a Pima basket from California, several interesting objects from the Tlingit and Eskimo.

of Alaska, and a Pomo feather headband. Mr. George A. Crofts of Tientsin, China, remembered the Museum with a gift of two large, remarkable clay statuettes of the T'ang period (A.D. 618-906), which have been added to the Blackstone Collection, and are placed on exhibition in a case of mediæval clay figures. The gift of Mr. and Mrs. Edwin F. Gillette of a set of Japanese dolls for the Dolls' Festival (*Hina Matsuri*) is a distinct addition to the Division of Japanese Ethnology. The group, illustrated in this Report, consists of a painted screen and nine dolls representing the emperor and empress of Japan, the elder and younger ministers of state, and an orchestra of five court-musicians, exactly as it would appear in a Japanese home on the occasion of the Dolls' Festival held each year for the pleasure and instruction of little girls. Such sets, handed down as family heirlooms, are taken out of the storehouse annually, carefully unpacked, and displayed for a week on a series of shelves covered with scarlet cloth. There are generally arrayed before the dolls miniature pieces of furniture, various articles for the house reproduced oftentimes in gold lacquer or in porcelain, such as tiny tables upon which are placed offerings of food prepared by the little girls, an act which in itself tends toward promoting a deep reverence for the emperor and a knowledge of the old court and its customs. The sixfold screen, which serves as a background, possesses great merits in color and decoration. Above a stream, near which grow iris, peonies, and a sturdy pine; a white crane flies downward toward two others standing on the bank. The golden-flecked clouds and the soft greens and reds in decoration blend admirably with the brocade costumes of the dolls immediately in front of the screen. These figures, made of enameled wood, are modeled with remarkable care, each expressing a distinct personality. As an illustration of the exactitude of execution, the hands and wrists of the old minister of state, which delineate real age, are truly of admirable workmanship. The costumes are all of brocade, probably a hundred years or more in age, which in itself is of value for the study of textiles and design. The head-dresses, of which there are three distinct types, besides the elaborate head-dress of the empress, are removable and exact copies of the style worn at court by the various characters here represented. The emperor and empress sit upon raised platforms, magnificently clothed, each possessing emblems characteristic of their offices. The empress holds a small folding-fan of wood painted with the favorite decoration of the crane flying above the pine, bamboo and plum, a combination emblematic of long life. The emperor, wearing a large sword, holds in his right hand a flat wooden baton of tablet shape (*shaku*), generally carried by all noblemen at the court. The old and young ministers are equipped with

bows, arrows, and swords. Swords are also thrust in the belt of each of the five court-musicians, two of whom sit upon lacquered stands while the other three squat upon the ground. The musical instruments, the flute, the hand-drum, and flat-drum, are faithfully reproduced in miniature. Under the auspices of Mr. William Wrigley, Jr., the Museum entered into an agreement with the Museum of the American Indian of New York City, for the purpose of organizing an extensive archaeological survey of Catalina Island on the Californian coast. The understanding was that the material resulting from this exploration should be equally divided between the two institutions. The field-work was placed in charge of Mr. George G. Heye, Director of the Museum of the American Indian, and conducted during last summer. As a result of these excavations, the Museum received from Mr. Heye in November a large quantity of archaeological material, consisting chiefly of pestles, mortars, and other implements of stone, particularly steatite, bone, shell, and clay. The collection is thoroughly representative of that culture-area. In order to make this collection more interesting and to illustrate some of the adjacent cultures in connection with it, Mr. Heye added to it as a gift to the Museum a considerable collection from San Nicholas and San Miguel islands, California, which contains a number of fine prehistoric shell and bone ornaments.

The notable additions to the herbaria during the year are: the first installment of the E. T. and S. A. Harper mycologic collection, consisting of about 10,000 specimens; the Santa Catalina Island collections of C. F. Millspaugh (595) and L. W. Nuttall (946 specimens); Pennell's North American (55) and U. S. Colombian (33) *Scrophulariaceæ*; Mrs. Wilcoxson's Massachusetts plants (95 specimens); Howe's distribution of Marine Algæ, principally West Indian and Bahaman (146 specimens); Maxon & Killip's Jamaican Plants (1,128 specimens); E. T. & S. A. Harper's Virginia and Massachusetts fungi of 1920 (210 specimens); and Ames' Bornean Orchids.

Of especial importance among the accessions of the year in the Department of Geology the Curator of the department reports that the collection of ores and minerals presented by Dr. Frederick J. V. Skiff is of especial interest and value. The Curator states: "This collection contains not only many specimens unique in beauty and rarity, but also some which since they came from localities from which it would be impossible, at the present time, to obtain specimens, may be considered priceless. Series of special interest and value in the collection are the following: A number of specimens of free gold, especially from South American localities and specimens of placer gold from Colorado and Idaho; other gold ores; platinum from the Urals; some fine speci-

mens of amethyst; excellent specimens of turquoise, tiger eye and thomsonite; some unique crystals of calcite from Joplin, Mo., showing a new crystal habit; silver ores showing free silver from several localities; and concentrates from various ores. The total number of specimens in the collection is 277." Mr. William J. Chalmers presented for addition to the William J. Chalmers crystal collection a remarkable pseudomorph of quartz after crystallized spodumene from Greenwood, Maine. Mr. Chalmers also presented a valuable book of photographs of the diamond mines at Kimberley, South Africa. This book contains 114 original prints illustrating various phases of the processes of mining at the Kimberley mines and covering chronologically nearly the entire history of the mines. The United Verde Company and United Verde Extension Company of Bisbee, Arizona, and the New Cornelia Copper Company of Ajo, Arizona, presented full series of the various ores mined by them and specimens of the associated rocks. These series in connection with specimens previously presented by the Utah Copper Company, afford material for fully illustrating the developments which have taken place in recent years in the utilization of the low-grade copper ores, usually known as "porphyry coppers." Specimens of both leaching and flotation ores are included in the series. These series all form important additions to the collection of copper ores. The kind offices of Mr. William J. Chalmers in assisting in procuring these gifts are gratefully acknowledged. A cast of the Yenberrie, Australia, iron meteorite was presented by the United States National Museum and a full-sized, polished section of the meteorite was purchased. Dr. A. de Chairmont presented nine individual aerolites of the Holbrook, Arizona, fall. By exchange with the University of Chicago a nearly complete skeleton in matrix of the rare Permian, lizard-like reptile, *Varanosaurus*, from Texas, was obtained, also from the same institution and in a similar way a prepared male skull and dentition of the extinct ungulate *Diceratherium*, from the Miocene of Nebraska.

The principal accession in the Department of Zoölogy during the year was the collection of 676 specimens, chiefly mammals and birds, obtained by Assistant Curator Osgood and Mr. H. B. Conover on the expedition to Venezuela of which mention is made elsewhere. Mr. Conover also presented to the Museum skulls and scalps of one moose and two caribou from northwest Canada. An important addition to the exhibition collection of mammals was a mounted giraffe presented by Mrs. Mollie Netcher Newbury. A collection of 270 salt and fresh water fishes from Louisiana was received in exchange from the Southern Biological Supply Company of New Orleans. The invertebrates received during the year consisted of a donation of over 8,800 shells

and 49 sea-urchins, starfish, etc., mostly collected by the late Mrs. Fanny Sonshine and presented to the Museum by her daughter, Miss B. Sonshine. A temporary addition to the Division of Entomology consisted of the twenty-year deposit of the Garry de N. Hough Collection of flies, received from the University of Chicago. The value of this material is mainly due to the fact that it is rich in authentically named species of certain families of European and North American muscid-like flies. This collection will prove useful for comparison when naming some of the Museum material. It will also be helpful to students who are interested in the families represented.

EXPEDITIONS AND FIELD WORK.—Through the generous co-operation of Mr. H. B. Conover it was possible to make one short but important expedition during the year. Assistant Curator Osgood, accompanied by Mr. Conover, left late in January for northwestern Venezuela and returned to the Museum in the latter part of May. They worked in the tropical lowlands surrounding Lake Maracaibo and in the Sierra de Perijá near the boundary between Venezuela and Colombia. Later they penetrated the interior south of Lake Maracaibo to the highlands of the Sierra de Merida, working at various levels up to an elevation of 15,000 feet. The collections and physical data obtained supplement the results of previous expeditions in an important way and make the Museum collection of the vertebrates of this general region the most comprehensive in existence. In prosecuting this work, the members of the expedition were greatly assisted by officials of the Caribbean Oil Company, notably Mr. F. R. Bartlett. They were much indebted also to Señor Juan E. Paris, a prominent and public-spirited citizen of Maracaibo.

INSTALLATION, REARRANGEMENT, AND PERMANENT IMPROVEMENT.—The Department of Anthropology was engaged during the first half of the year in packing material for removal to the new building. The method of packing adopted proved so efficient that no essential damage was done to any specimen, whether large or small, during the removal. On moving into the new building in June, the staff put in order and arranged the offices, work-rooms, store-rooms, and laboratories assigned to the department on the third floor. An immense number of crates, boxes, and packages had been accumulated in Installation Room 34, during moving-time. These were checked up with the records, sorted, and relegated to the various sections to which the material belongs. Cabinets for storage were placed in work-rooms, several storage racks and seven layout tables were made. Hundreds of exhibition cases were stripped of packing

material, numerous crates and boxes were opened, and the material arranged either for exhibition or study and exchange collections. The best possible use has been made of the space available on the third floor. Rooms 65 and 66 are utilized for the storage of East Asiatic collections. Room 50 contains Japanese material, Room 48 Melanesian collections, the greater part of which are stored in the Installation Hall, Room 46 North American archæology, Room 44 Indian blankets and baskets, Room 42 Hopi material, Room 43 Southwest, Navaho and Mission Indians material, Room 40 Mexican and South American archæology, Room 33 Northwest Coast collections, and Room 34 Malayan material. Exchange material is placed in Rooms 30 and 31. Room 28 is allotted to study collections. Work on actual installation of exhibition cases was begun on September 20th. During this brief period of three months a total of 249 cases was installed or re-installed. These cover all sections of the department. The Philippine Hall, 55 cases, with the exception of the large group-cases, the Chinese collections on the East Gallery Hall of the second floor, 64 cases, save several large wall cases, and the greater portion of the West Gallery Hall, can now be reported as being completely installed. Hopeful progress has been made in the Joseph N. Field Hall (Melanesia), the Mexican and South American Hall, the Southwest Hall, and the hall allotted to Egyptian and classical archæology. In the Mexican and South American Hall, nine cases have been newly installed; these illustrate Calchaqui stone work, ethnology of the Upper Amazon, Brazil, Paraguay, Peru, and Ecuador, and Maya and Mexican archæology. In every instance, exhibition material was carefully sifted, and the new arrangement is considerably improved upon the old system. A special hall, located on the ground floor along the east side of the building, having been assigned to the department for the exhibition of primitive means of navigation, 82 boats were placed and arranged in the hall during August. Five exhibition cases, two illustrating boat-models from China, two with boat-models and other means of transportation from India and Burma, and one with similar material from New Guinea, were moved in and placed at a somewhat later date. When completed this hall will prove an attractive feature in the building. It was decided to discard from exhibition all table and upright cases which were found to be no longer serviceable and hardly in harmony with the character of the new halls. This step necessitated a complete vacating of these cases containing large storage bases in which a large quantity of material had been packed for transportation. This material has been temporarily stored in Room 45 on the third floor. The Departmental Library has been completely arranged and set in order in twenty-three cabinets in Room

39. With the co-operation of the departmental staff, the Museum librarians completed this task within a few weeks. As all books pertaining to anthropology, also those formerly stacked in the main library, are now assigned to the departmental collection, it was necessary to prepare a new set of catalogue cards in conformity with this new arrangement, and the number of the cabinet in which a book is placed has been added to each card, so that it is possible to promptly locate a volume. The Bagobo group has been completed and the figure of the Hopi boomerang-thrower remodeled.

In the Department of Botany the entire staff of the department proper was employed during the first five months of the year in finishing preparation for moving into the halls and rooms set aside for it in the new building. The specimens in all those exhibition cases not prepared during the closing months of the previous year were secured in place, or packed in containers, and properly marked and labeled to designate the position they were destined to occupy. The entire herbaria and all other material, supplies, appliances, etc., were, in like manner, prepared for transportation. The month of May and part of June were employed in superintending the removal of the packed material from the old building and the placing of the same in position in the new. In September re-installation began both in the exhibition halls and the working rooms. Since that date the books of the Department Library have been temporarily shelved and arranged, the phanerogamic herbarium fully organized, and most of the laboratories at least partly equipped for work. On account of alterations deemed expedient in the departmental arrangement as originally planned, it became necessary to change the installation of a large number of cases previously considered complete. These re-installations have consumed a large amount of time and rendered re-installation far slower than was expected, setting back the anticipated completion of the department at least five months. Contributory to this extra work has been the elements of the unfinished character of the halls and the dust raised in the work of their completion. This has caused more cleaning of specimens and repainting of case interiors than could have been foreseen. In Hall 28 one hundred and ten case units have been placed. These are devoted entirely to all those plant families the elements of which are on hand at this time. The installation will comprise plant reproductions and natural specimens embracing the taxonomy of about 100 families. Of these 81 are now installed. Hall 27, Foreign Woods: In this hall the cases have not yet been shifted to their intended position. They will require comparatively little interior arrangement when once set, as the contents are now in place. Hall 26, North American Trees: The

cases in this hall are in position. They will require little interior work done upon them. Halls 25 and 29, Economic Botany: The cases in these two halls are substantially all placed and 71 units have been re-installed complete. The herbarium, in its organization, had been separated into four great divisions: (1) *Flowering Plants*, completely organized; (2) *Fungi*; (3) *Cryptogams in General*, ferns, mosses, lichens, hepatics, etc.; (4) *Plants of Illinois*. Each of these herbaria occupy contiguous rooms. As the plants of Illinois are more frequently consulted by amateurs in botany than those of the general herbaria, it has been considered best to segregate them, thus securing the main herbaria against disorganization by untrained botanists. During the first four months of preparation for moving the Section of Plant Reproduction continued its regular work with but little interruption. The months of May and June were then utilized entirely in the work of packing, dismembering, moving and re-establishment in the laboratories in the new building. In July the work of the section was again established, though during the last few months of the year it has been greatly interfered with through the necessity of utilizing a large part of the effort of the staff in the re-installation of cases in the exhibition halls. No damage whatsoever was sustained by the large number of delicate models and reproductions packed, or secured against the anticipated rough handling of the cases and packages during transportation. Notwithstanding the large amount of time consumed in these necessary interruptions to the regular work of the staff, the section finished the following productions, all of which are now installed in the exhibit cases of Hall 28: The Fig (*Ficus carica*). A natural size branch of the tree in full leaf and fruit; an enlarged section of the edible fig revealing the numerous flowers enclosed within the fleshy, hollow receptacle; an enlarged section of the Caprifig with male and female flowers; an enlarged female flower in section; an enlarged male flower with its bracteal envelope; an enlarged gall-flower showing the female caprifying insect emerging; and full descriptive labels detailing "caprification." The Seven-year Apple (*Casasia clusiifolia*). A small branch of the shrub with fully matured fruit fallaciously said to "require seven years to ripen." The Kaffir Orange (*Strychnos spinosus*). A flowering and fruiting portion of this shrub of the Strychnine Family. While nearly all species of this group are virulently poisonous this particular one develops an edible, spicy fruit. An enlarged flower of this plant reveals the essential organs characteristic in the family. Avocadoes or Alligator Pears (*Persea Persea*): fruits of four characteristic varieties of this delicious "Salad Fruit" now becoming noticeable in our markets through its cultivation in southern Florida. The four

varieties reproduced are: The West Indian; The Guatemalan; The Mexican; and a hybrid secured by crossing the Guatemalan and the Mexican. The Coconut (*Cocos nucifera*): enlarged male and female flowers together with a section of the female flower revealing its essential characters. The Spider Lily (*Hymenocallis caribaea*): a full size flowering plant. Cotton plant (*Gossypium barbadense*): an entire plant in full leaf, flower and ripe boll, natural size; an enlarged flower, in section, revealing the essential organs. *Zamia* (*Zamia floridana*): enlarged sporophylls and a fruiting cone of this species illustrating the floral characteristics of the cycads. Mangoes (*Mangifera indica*): three varieties of this delicious fruit of the Sumac Family, now being cultivated for the market in southern Florida: "The Mulgoba," "The Haden," and "The Amiri." A Green Alga (*Oedogonium*): eight enlargements illustrating reproduction in this group; whole mass of the plant, magnified; asexual reproduction, the oögonia; the sperm cells; dwarf males; resting stage, oöspore; germination, zoöspores; fertilization. A Green Alga (*Ulothrix*): four enlargements illustrating this genus: A piece of a filament, spore formation; swarm-spores, germination; conjugation; zygosporos. More or less work has also been done on the following studies now in process of production: Coconut (*Cocos nucifera*); reproduction of a natural size tree top in leaf, full flower and fruit. *Zamia* (*Zamia floridana*); a full size plant of this important starch-producing cycad. Four-o-Clock (*Mirabilis jalapa*); a portion of a natural size plant and a number of various colored flowers, designed to illustrate Mendelian principles of heredity. Screw Pine (*Pandanus utilis*); reproduction of a portion of the plant, natural size. Pride-of-India (*Melia Azedaracha*); an enlarged flower revealing the essential organs, to illustrate characteristics of the Mahogany Family. Alga (*Bryopsis plumosa*); an enlarged tip of a frond.

During the first part of the year packing in the Department of Geology of all material and cases intended for the new building was completed. This included packing of the contents of forty-two exhibition cases remaining installed at the close of last year, a large quantity of material belonging to the study collections, furniture and equipment of the offices and laboratories of the department and some collections and objects that for lack of exhibition space had been stored in the basement. As noted in a previous report, the nature of nearly all the specimens in the exhibition cases made it necessary to remove them from these cases in order to put them in a safe condition for transportation. In some instances after being packed in proper receptacles, the specimens were returned to the cases and the cases used as carriers, but it was found possible to move only three cases and contents without

removal of the specimens. During the period of packing as a whole two hundred and eighty exhibition cases were emptied of their contents and all fittings made fast so that there would be no danger of injury to any part in moving. It is gratifying to report that this work was so carefully and thoroughly done that with the exception of one case which failed owing to faulty construction, no cases or contents suffered any breakage of glass or other marked injury during the moving to the new building and placing in position there.

One of the most difficult specimens to prepare for moving was the skeleton of the large dinosaur. Because of its great weight and fragile nature this could not be transported as a whole. It was therefore necessary to disarticulate the skeleton and handle each bone as a unit. The leg bones and most of the pelvic bones were crated separately without additional reinforcement. The foot bones and the smaller bones of the tail were separated and packed in tight boxes. The ribs required additional strengthening. Each rib was first wound spirally with tough paper to protect its finish. It was then covered with plaster and burlap, as fossils are treated for shipment from the field. In turn each rib was further reinforced by means of iron rods, either bent to conform to the outline or extending across the arc as a chord. The entire series was then crated. The vertebrae were handled singly. Before removing from their position on the frame-work the spines and lateral processes were braced by means of light, iron rods. These braces, extending from each centrum to the lateral processes and thence to the crest of the spine of each vertebra, were attached by the use of plaster. This done, the screws holding each vertebra to the steel frame-work were removed, leaving the immediate support attached to the specimen. The vertebrae were then placed separately on light, wooden frame-works which acted as temporary bases, and were firmly anchored to them in an upright position by means of wires attached to the four corners of the base and drawn tightly through the neural canal. The vertebrae were then placed, two each, in wheeled carriers padded at the bottom to protect from jar. Each vertebra was firmly attached to the bottom of the carrier by means of long screws driven through the temporary base. By the use of all these means the entire skeleton was well protected and was transported to the new building with comparatively little breakage. The steel framework on which the skeleton was installed was unbolted and moved as lengths of structural steel and the wooden base above the frame-work was taken apart and carefully crated for transportation.

The safe transportation of the large fulgurite also presented a somewhat difficult problem. The specimen is an exceedingly irregular hollow

tube about nine feet long and an inch in diameter, with walls of about the thickness and strength of an egg shell. This had been mounted on hangers which held it about six inches from the back of its case. In order to move this specimen with its supporting wooden rod it was placed in a horizontal position in a special packing case. It was then well wrapped with paraffined tissue paper and a thin fin of tow and plaster was built up from an anchorage on the packing case floor to the specimen, supporting it throughout its entire length. At intervals of perhaps a foot, a narrow ring of tow and plaster was also passed around the specimen to connect it securely to the fin. The paraffined tissue not only prevented staining by the plaster but also checked any adhesion of the plaster or dovetailing to any rough portions of the specimen. Protected in this manner the specimen was safely transported to the new building and after unpacking was readily mounted and installed.

Besides the exhibition cases, the departmental material transported to the new building was contained in 226 barrels, 1,086 large boxes and crates and several thousand small boxes and cartons. Packing, transportation and unpacking of this material was accomplished with practically no loss whatever from breakage or other injury, a fact which gives proof of the care with which the packing and handling was done. The large skeleton of the Northern Mammoth presented to the Museum some years ago by Mr. George Manierre and temporarily housed at the Chicago Academy of Sciences through the courtesy of that institution, was also transferred to the new building.

In order to facilitate placing of the exhibition cases in the new building, installation numbers were given to each hall of the portion of the building assigned to the department and to each alcove in each hall. The cases designated for these alcoves were then correspondingly marked, so that on arrival at the new building each case was taken directly to its assigned alcove. Before installation all the glass of all the cases was cleaned, the wood-work of the exteriors was refinished and that of the interiors repainted. Any injuries to the exterior wood-work of the cases that were too deep to be rubbed out, were carefully chiseled out and new wood inserted and the whole refinished in such a manner as to restore the cases to their original appearance. The cases forming the sides of the alcoves were carefully fitted to one another in such a manner as to make the line of joining as narrow and inconspicuous as possible and they were then securely fastened together. A greater rigidity and stability of the cases was thus gained, and a pleasing appearance of the cases as seen from the aisle was produced. The number of cases so joined was 126. Twenty of the flat cases having shown in moving that the method of attachment of the legs was not as secure as was desirable,

these were thoroughly overhauled and stout fastenings provided. Also, from fourteen of the cases in Frederick J. V. Skiff Hall the burlap linings which had become torn and discolored from long usage, were removed and new, freshly dressed linings substituted. Blocks numbering 2,600 used for mounting individual specimens and various other mounts used in this hall were also repainted and the shelves of many of the cases were braced with strong wooden supports so as to guard against possible breakage of the shelves from the weight of specimens. A large number of other supports or fixtures, such as easels, frames, pedestals, etc., used in this and other halls of the department were also repainted.

The space assigned for the exhibition cases of the department in the new building consists of five halls on the second floor of the western section of the building. Four of these halls, 180 ft. by 42 ft., in dimension, have their greatest length in an east and west direction and one, 317 ft. by 48 ft., has a principal north and south range. Of the four halls extending east and west, that on the north side of the building contains the systematic collection of minerals, the meteorite collection and part of a collection illustrating physical geology. The systematic mineral collection occupies the eastern half of the hall. It is installed in 32 cases, 16 of which are of a sloping-top type and 16 of a tall, upright type. The cases are arranged on either side of the hall so as to form alcoves, each alcove except the first being bounded by a tall case on each side and containing a sloping-top case in the center. Each alcove is twelve feet deep and including the side cases, fourteen feet wide. Each is lighted by a pair of windows at one end. The sides of the alcoves are made by the tall cases being placed at right angles to the length of the hall, one end of each resting against a pilaster of the wall between the windows. A broad, middle aisle sixteen feet in width permits free passage through the center of the hall. The mineral collection is arranged in these cases according to the order of Dana's system, a number on the label of each specimen showing the position of the specimen in the system. For the most part, the large specimens are shown in the tall cases at the sides of the alcoves and the smaller specimens in the lower, central cases. The re-installation of this collection was completed during the year, the specimens being for the most part installed in the positions and cases which they had occupied in the old building, but some alterations necessitated by changes of orientation of the cases were made. The total number of specimens now on display in this collection is 4,476. In the re-installation of all the collections of the department, the system of marking described in a previous report, by which the position of each specimen in installation was indicated by a label wrapped with the specimen, proved of great assistance in securing rapid and accurate

placing of the specimens. Following this collection, two cases of a combined upright and flat form are devoted to the William J. Chalmers crystal collection and two similar cases contain collections illustrating varieties of amber and ornamental objects carved from semi-precious stones. Following these, six large oblong cases, three square cases and two narrow, upright cases contain the meteorite collection. In the square cases are placed large, single specimens of the Davis Mts., Long Island and Brenham falls, respectively, while the remaining meteorites which are exhibited are to be disposed on pyramids or shelves in the other cases. The remainder of the hall is devoted to four upright cases arranged in alcove form containing collections of concretions and septaria, and specimens illustrating glacial phenomena, weathering, etc. Two large, glaciated slabs from Kelley Island and Amherst, Ohio, are to be installed on individual bases in opposite alcoves in connection with this series. In the next hall south there have been placed at the east end eight upright cases. These are to contain the collections illustrating various rock structures, such as dikes, veins, cave formations, rock markings, etc. These cases are arranged in alcove form disposed in a manner similar to that already described for the cases containing the systematic mineral collection. A case devoted to large gypsum crystals and one containing a fulgurite nine feet in length are also placed in this hall. Following these, eight sloping-top cases are devoted to the collection of systematic petrology. Each specimen in these cases is mounted on an individual block screwed to a pyramidal screen. The installation of this collection is complete, 872 specimens being now on display. The remainder of this hall extending eastward is to be devoted to the exhibition of the map collection, consisting of about seventy-five relief and other maps, also globes and other geographic material. The maps are to be exhibited on tables which are to be arranged in positions similar to those of the cases which form the alcoves in other halls of the department. The maps have been unpacked and partially placed, but have not yet been finally installed. The following hall south contains collections of an economic character, chiefly of coal, petroleum and other hydrocarbons, and sands, clays and soils. Of these collections, those of the first group will occupy the eastern half of the hall, those of the second group, the western half. The eastern half is installed according to the alcove plan, similar to that adopted in the department as a whole, eighteen upright cases forming nine alcoves. In these alcoves and adjacent to them ten table and other low cases are placed, and in one double-spaced alcove a large case containing an exhibit of coal-tar products. A model of the original Rockefeller oil refinery which,

from lack of space has not been shown for some years, will be placed in another alcove. In the sixteen-foot center aisle two table cases four by six feet in size are placed. These contain the diamond and part of the asphalt exhibits. Against the south wall of the hall and adjacent to the passage southward, a large section of an Australian coal seam will be placed. In the western half of the hall the installation is composed chiefly of table cases. As these do not readily lend themselves to a true alcove arrangement, distribution of the cases in a manner consistent with the alcove plan of the rest of the hall has been adopted. The cases are placed in pairs, each pair extending from the windows toward the center of the hall. There is left a twelve-foot center aisle and a narrower passage between the cases of each pair. The arrangement is broken in one place to give space for a diagrammatic collection of clays which requires a linear arrangement of four cases. Beyond this installation of twenty-two table cases at the extreme west of the hall, two square cases containing large specimens have been placed, and bordering the west wall an upright case and a large model of an iron mine. The specimens in the hall as a whole transferred from installation in the old building are to be re-installed in the same cases and with the same arrangement as before. There will also be added, however, many specimens which had been withdrawn from exhibition for several years on account of lack of room. The entire coal collection is one group of such material and substantial additions will also be made to the exhibited collections of clays, sands and soils. The most southerly of the halls of the department has been named Frederick J. V. Skiff Hall. The hall contains the principal economic collections of the department. It includes the ores of the precious and base metals, building stones and marbles and a part of the collection of non-metallic minerals of economic importance. The cases in the hall are arranged according to the alcove plan, broken for a space midway of the hall by the substitution of tall, square cases for the long, upright cases which outline the regular alcoves. These square cases are so disposed, however, that the general alcove effect is retained. A center aisle fourteen and a half feet wide has been left unobstructed through the entire length of the hall. The predominant type of cases used in the installation of the hall is that of those which form the sides of the alcoves. These are materially different in form from those employed in any other hall. They are designed to keep the specimens as near the eye of the spectator as possible even at sacrifice of capacity. They are seven feet high, and at a height of two feet from the floor the exhibition space is extended forward in a horizontal bay which not only keeps the

specimens nearer the eye, but also affords room for larger specimens and those that should be examined from above. The length of the cases is twelve feet, except for six which measure fourteen feet. Each alcove is outlined by two of these cases, one being placed on each side of a window. The cases stand with one end against the wall and extend toward the aisle in the center of the hall. Including the side cases, each alcove is fourteen feet wide, the open space in the center being four feet narrower. On the south side of the hall, the alcoves are twelve feet deep. On the north side they are fourteen feet deep. In the center of each alcove one or two table cases, four by six feet, are placed. Midway of the hall, opposite the passage connecting with the next hall to the north, the character of the alcoves is varied, the principal change being the replacement of some of the long cases by two tall cases, four feet square. These cases are glazed on all sides, except the base, and contain massive specimens and materials of special character. There are twenty-six alcoves in the hall as a whole and they contain forty-two twelve-foot and forty-four other cases. The ores of the heavy metals and the building stone collections are for the most part re-installed in their original cases and in their original positions in the cases. The exigencies of re-installation have compelled some changes, but they are relatively few. The addition of two cases against the east wall has made possible the re-display of a case and a half of ores which had been withdrawn from exhibition for a number of years on account of lack of space. Except for the building stones and alkalis, that part of the non-metallic economic collections which appears in upright cases in this hall has been transferred to cases of a different type from those formerly used. This has made some re-arrangement necessary, owing to the different capacities of the two types of cases, and withdrawal of some of the material has been unavoidable, but for the most part the original arrangement of the specimens has been retained. It was necessary to spend much time and labor in cleaning the specimens of ores. The method employed has been first to remove the dust by use of a vacuum cleaner, then to wash and dry the specimens. As water alone or soap and water was found not to attack a sooty coating which had sometimes formed through exposure to a smoky atmosphere, and as the more corrosive detergents could not be used, some care in selecting a suitable cleansing agent was found imperative. Satisfactory results were, however, secured by use of cold water containing a moderate quantity of carbonate of ammonia. As the collections in this hall are now arranged, there are shown at the east end and extending from the east entrance about half way down the hall, the ores of the precious and base metals. These are arranged in the order of the installation employed in the old building;

first, synoptic collections of gold, silver and lead minerals and ores and secondly, collections of these ores geographically arranged. Platinum ores occupy one table case at the head of the series. The gold, silver and lead collections are followed by ores of the other metals with the specimens geographically arranged under each metal. Interspersed with these ores at convenient points are placed models illustrating methods of mining and of extracting the metals from the ores. The metallurgy of some of the more important metals is also illustrated by specimens. Following the ore collections are placed those of the building stones and marbles. These are shown in the form of polished slabs in upright cases and of four-inch cubes in table cases. To them are added specimens of materials adapted to ornamental uses cut in forms intended to display their fitness for such uses. The western end of the hall is filled with a variety of minerals of economic interest, including mica, asbestos, and abrasive materials, and at the extreme end the alkali collections are placed. The western hall, which is the largest of the exhibition halls of the department, is devoted to the paleontological collections. This hall, as already stated, is 48 feet in width and 317 feet in length. Its size and proportions have enabled a unique installation of the paleontological collections to be made, the most important feature being that it has been possible to place all the collections in the hall in chronological order. Thus an epitome of the history of life upon the earth, beginning with the remains of living forms of the earliest period and passing in order to the life of Recent time is presented to the observer. The characteristic fossils or life forms of any particular period can be seen in whatever portion of the hall corresponds in position to the place of the period in time, or the course and development of life as a whole can be studied. The earlier forms have been placed at the south end of the hall, and from this point the progression in time advances to the north end. Introductory to the series, two cases contain, one a collection illustrating methods of fossilization and the other a collection showing contrasting forms of ancient and modern plants and animals. As in the other halls of the department, the cases in this hall are arranged to form alcoves, the sides of the alcoves being made by upright cases twelve feet in length by eight feet in height and usually two feet in depth. Two of these placed back-to-back with ends resting against the pilasters which separate the windows of the hall form the alcoves. Within these alcoves for the most part, single sloping-top cases designed for specimens which require close inspection are placed. These cases occupy a floor space of four by five feet each, leaving an aisle three feet wide between them and the sides of the alcoves and four feet wide between them and the windows. Occasionally the alcove space is doubled or trebled in

order to permit the placing of large objects. The upright cases as a rule contain large specimens, slab mounts and single skeletons. Altogether twenty-two alcoves of this form have been placed in the hall. A central aisle, twenty-two feet in width, passes through the hall between the alcoves, and this is utilized to some extent for the exhibition of large mounts, such as those of the two dinosaurs *Apatosarus* and *Triceratops*, the cast of the *Megatherium* skeleton and some single cases. The installation of all cases in the hall, numbering sixty-six, has been essentially completed. In general, the specimens were placed in the cases in the same order and positions which they had occupied before removal, but wherever some improvement in sequence or appearance could be made this was carried out. The precaution which had been adopted to secure the safe transportation of some of the more fragile material, such, especially, as wrapping dinosaur and other bones with paper and covering them with burlap and plaster, proved on unpacking to have been very successful, practically no breakage having occurred and the appearance of the specimens not having been injured. This was especially gratifying in the case of the large *Triceratops* skull, the thin, expanded bones of which were exceedingly fragile. The specimens yet to be installed in this hall are chiefly large and massive ones, such as the great dinosaur, *Apatosaurus*, the skeletons of the mastodon and mammoth and some large casts. The iron frame-work for the dinosaur has been assembled but the erection of the specimen upon it has not yet been accomplished. The energies of the staff were devoted so largely to installation, that little opportunity was available for work upon the study collections or in the laboratories. The study collection of systematic minerals has, however, been placed in trays, labeled and arranged in order in drawers contiguous to the exhibit series. Work in the laboratories has largely been confined to repairs upon specimens, but in the early part of the year opportunity was found to remove from matrix and prepare for exhibition two large ribs, nine feet in length, of the type specimen of *Brachiosaurus*. This material, as it came from the field, is in so fragmentary a condition, that the task of preparing it is a difficult and tedious one, but the unique character of the material makes its preservation highly important.

In the Department of Zoölogy, the year was devoted almost exclusively to the work in connection with the removal to the new building. Packing continued until April and was followed by the period of actual moving during which members of the staff, office, and taxidermists' force were assigned to specific tasks in checking the pieces out of the old building and into the new and in giving special care to such material as required it. The entire collections of the department were moved

without serious damage. The smaller exhibition cases were transported intact with specimens of light weight *in situ* securely fastened to the shelves or to the floor. Even the extensive osteological exhibits traveled largely in this way, although small skeletons and crania were specially packed in cartons and very large ones were crated. Heavy material, as corals and other fragile invertebrates, was removed from the cases and packed in boxes, cartons, and barrels. Exhibition cases of medium size (more than 4 feet in width) were transported after removal of all or part of the glass and with the specimens covered with a temporary protecting cloth. In this way certain habitat groups, as the hyaenas and warthogs, were handled simply and successfully. Very large cases, including many of the habitat groups, as moose, mountain sheep, koodoo, zebra, etc., required the complete dismantling of the case and the dismemberment of the group, the animals being placed individually on special temporary bases and the ground work and accessories being divided and crated. The African elephants, after removing the head of the one mounted with its trunk elevated, were placed on an open flat-car and came through without mishap. The study collections of mammals and birds packed in original containers offered no difficulty. Fishes and reptiles in glass jars, which were wrapped in corrugated cardboard and packed tightly in cartons, suffered no breakage whatever. Even pinned insects, which were subjected to much vibration, show no injury so far as examined. Since removal to the new building steady progress has been made in the re-installation of the exhibition material. The first hall to be finished was the west colonnade (George M. Pullman Hall) which has been devoted to ungulate mammals, the deer, antelope, sheep, goats, and wild oxen. These are mostly game animals of considerable popular interest and have been arranged to form a unit with allowance for slight expansion in the future. The hall of systematic mammals followed and then that of systematic birds and the habitat groups of birds. A number of groups of African mammals also were completely installed before the end of the year. Over two months were devoted to the re-installation of the shell exhibit. Besides re-installing the shells which were on exhibition in the old building, good progress has also been made on the installation of the four new A-cases that had not been in use heretofore. In order that there should be uniformity in color of all the shell tablets and labels, it was decided to blacken the edges of the yellow shell tablets and to reprint all of the buff-colored labels in the six so-called table cases. Some progress has also been made in the installation of the sponge and coral exhibit. There have now been re-installed and completed twelve A-cases of shells and two standard cases of sponges and corals. Several other cases also are far advanced

toward completion. All of the skeletons have been unpacked and four cases have been installed and two are under way. The large skeletons are being installed on bases in the exhibition halls.

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION OF FIELD MUSEUM OF NATURAL HISTORY.

—At the end of the present year there were 677 cases available for circulation among the public schools of Chicago. Of this number, thirty-one were prepared during the year. This is a falling off from the previous annual production of cases for circulation. This decrease in cases prepared is attributed to causes which the department could not avert. The principal causes were the resignation of an assistant taxidermist, and the transfer of a preparator to another department. Another cause was the abandonment for several weeks of practically all productive work for preparations necessary for the removal from the old building to the new one, and the installation there of fixtures for office and work-rooms. The removal of the department to the new building was accomplished largely by the use of the delivery truck, and without the loss of a day in the delivery of cases to schools. Rather than increase the production of cases by sacrificing past standards, the usual care with the details of each was employed. When arranging the schedule for the loaning of cases to schools during the scholastic year of 1920-1921, the latest issue (1919-1920) of the Directory of the Public Schools of the City of Chicago was used. In this directory the names and addresses of 23 high, and 255 main elementary schools were given. In compliance with a formal request made last year that cases be also loaned to high schools, seventeen were included in the present operating loan schedule. For the reason that six of the listed high schools have technical courses, cases are not loaned to them. Cases are loaned to 253 main elementary schools. Because of the great distances to two of the main elementary schools, and of road conditions met with by the motor truck in delivering cases to them, they have been, it is hoped, only temporarily deprived of the uses of the loan cases. In addition to making loans to the 253 main elementary schools, cases are also loaned to 18 branches of elementary schools. Besides the 288 schools, made up of 17 high, 253 main elementary and 18 branch elementary schools, which are scheduled to receive cases, there are other schools to which cases are loaned when requested to do so. These are the practice, continuation and parental schools. Based on information received from the office of the Superintendent of Schools as to the number of pupils attending public schools, it is confidently believed that cases will be loaned during the present scholastic year to schools having a combined enrollment of fully 344,000 pupils. This estimate is com-

posed of 316,000 pupils of elementary and of 28,000 of high schools. In response to a formal request made by the Boys' Work Secretary of the Young Men's Christian Association for the loan of cases to that association's summer school, at 1621 Division Street, several cases were sent. That these cases proved to be of educational value and interest is evident, for, from the same source there came a subsequent request for cases, but in this instance it was asked that cases be loaned periodically throughout the year. This request is being complied with, and in doing so care has been and will be taken to prevent any interference with service to the public schools. The Supervisor of the Children's Department of the Chicago Public Library requested the loan of six cases of birds for the purpose of exhibiting them for a short time at the Public Library, to stimulate interest in books on birds. The cases were loaned, and it was reported that they rendered the service for which they were solicited. This year, as has been done during the past two years, twenty-four cases were on exhibition in the Art Gallery of the Municipal Pier during the months of July and August.

Mrs. Charles L. Hutchinson, President, Chicago Chapter, Wild Flower Preservation Society of America, asked that four cases be displayed at the annual exhibition held under the auspices of that society, at the Art Institute from the 6th to the 22nd of January 1920. This request was granted, as was a subsequent one for six cases for the same purpose, and at the same place from December 18th 1920 to January 18th 1921. In connection with a request for the temporary use of several cases for the purpose of rendering service in establishing a system of loaning cases to schools in St. Paul, Minnesota, the curator of the museum of Saint Paul Institute in that city wrote:—"While visiting the Field Museum some time ago, I was greatly impressed with the educational value of your school cases. The fact that they can be circulated through the various schools from time to time gives them added value." It is regretted that this request could not, at that time, be granted. The President of the San Diego Society of Natural History stated in a communication that a considerable donation had been made to that society for the purpose of popularizing natural history, especially in the schools of San Diego and, having seen this department's exhibit at the Panama-Pacific Exposition, he would like to have such data as would assist in establishing a similar system. It has since been learned that the museum of this society will build a number of small cases for containing birds, minerals, plants, etc., to loan to schools, as part of its educational work. Having in view the prospect of the U. S. Department of Agriculture aiding rural communities on subjects pertaining to agriculture, Professor Frank Lamson-Scribner, Special Agent and

Agrostologist of that department, and two of his departmental associates, conducted a careful examination of a great many loan cases, and made many inquiries as to methods employed in loaning and in recording them.

After having made a most careful inspection of many cases of natural history subjects, Doctor Paul Bartsch, Curator, Division of Marine Invertebrates, U. S. National Museum, stated in a communication to this department: "I wish there might be some way to actually determine the amount of good enterprises of this kind bring about. To me it seems the very foundation of things. I am sure that the citizens of Chicago will show much greater interest in outdoor studies, and a much closer touch with nature, than other citizens where such work is not undertaken. These youngsters do grow up so quickly, and it will only be a little while until the children that have had the benefit of your efforts will become parents who will rejoice with the little ones for the opportunity you give them . . ."

PHOTOGRAPHY AND ILLUSTRATION.—A large part of the year was spent by this section in packing negatives, lantern slides and photographic apparatus for transportation to the new building and in unpacking and arranging negatives and lantern slides after the removal so as to be readily accessible when required. The following is a tabulation of the work performed in this section:

	Number of Negatives Made	Number of Prints Made
General	212	6
Anthropology	6	56
Zoölogy . . . . .	...	115
Totals	218	177
Total number of Catalogue entries during year 1920		395
Total number of Catalogue entries to December 31, 1920		121,239
Total number of Record Books		20

PRINTING.—The number of labels and other impressions made by the Section of Printing is as follows:

	Exhibition Labels	Other Impressions
Anthropology	7,659	975
Botany	192	2,200
Geology	970	500
Zoölogy	376	500
Library . . . . .	....	1,500
Harris Extension	94	500
General . . . . .	...	15,010

Herewith are also submitted balance sheet, lists of accessions, names of members, etc., etc. **FREDERICK J. V. SKIFF, Director.**

ATTENDANCE FROM JANUARY 1, 1920, TO
FEBRUARY 23, 1920.

ATTENDANCE		
Paid Attendance:		
Adults	443	
Children	24	467
Free Admission on Pay Days:		
School Children	93	
Students	100	
Teachers	22	
Members	4	
Officers' Families	2	
Press	3	
Special	9	
Free admissions for one week following the dis- continuation of admission charges	119	352
		819
Admissions on Free Days:		
Saturdays	575	
Sundays	2,351	
Total Attendance		3,745

BALANCE SHEET

December 31, 1920.

ASSETS .

SPECIAL FUNDS

Marshall Field Bequest Endowment Fund:

Real Estate	\$3,200,000.00	
Investments	588,469.78	
Loss from Sale of Investments	26,430.22	
Cash	100.00	\$3,815,000.00

Sinking Fund:

Investments	\$ 47,290.00	
Cash	54.89	47,344.89

Marshall Field Bequest Building Fund:

Investments	\$ 282,456.11	
Loss from Sale of Investments	155,777.37	
Cash	21,350.88	

\$ 459,584.36

Paid for New Building construction	6,143,806.54	6,603,390.90
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The James Simpson Theatre Fund:

Cost of construction and equipment to date		86,157.31
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Stanley Field Museum Employees' Pension Fund:

Investments	\$ 176,550.00	
Cash	708.69	177,258.69

Mrs. Stanley Field Plant Reproduction Fund—

Provisional:

Investments	\$ 143,770.00	
Loss on sale of investments	7,503.00	
Cash	496.39	151,769.39

Edward E. Ayer Library Fund:

Investments		50,000.00
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Life Memberships Fund:

Investments	\$ 89,340.00	
Cash	507.64	89,847.64

Huntington W. Jackson Library Fund:

Investments	\$ 1,821.50	
Cash	27.08	1,848.58

(Continued on page 406.)

BALANCE SHEET

December 31, 1920.

LIABILITIES.

SPECIAL FUNDS

Marshall Field Bequest Endowment Fund . . . \$3,815,000.00

Sinking Fund:

Amount of Accumulated Fund to December 31,		
1920	\$ 41,061.82	
Income from Investments	6,283.07	47,344.89

Marshall Field Bequest Building Fund:

Amount of Bequest	\$4,000,000.00
Income from Investments	2,256,891.11
U. S. Government Refund—account Hospital- ization	87,215.16
New Building Salvage	7,311.86
Building Sinking Fund—Income	5,635.66
Advances by Woman's Temple Realization Fund	146,181.69
Accrued Interest	155.42

Deficit Fund:

Contribution by Mr. Stanley Field	100,000.00	6,603,390.90
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The James Simpson Theatre Fund:

Amount of Contribution to date	\$ 36,339.00
Advances by Woman's Temple Realization Fund	49,818.31

Stanley Field Museum Employees' Pension Fund:

Contribution by Mr. Stanley Field	\$ 150,000.00
Income transferred to Pension Fund	25,000.00
	\$ 175,000.00

Balance of Income from Invest- ments for 1920	\$5,891.30	
Less Group Insurance Premiums and Pensions	3,904.90	1,986.40
Accrued Interest	272.29	177,258.69

Mrs. Stanley Field Plant Reproduction Fund:

Amount of Provisional Deposit	\$ 150,000.00
Net Income—1920	\$9,412.39
Less Operating Costs for 1920	7,643.00

(Continued on page 407.)

406 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

New Building Moving and Furnishing Fund:

Moving costs paid to date	\$ 63,936.26	
New Furniture	3,068.27	
Investments	39,000.00	
Cash	7,325.95	113,330.48

Illinois Central Foot-bridge Fund:

Cost of Foot-bridge		17,175.48
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Illinois Trust & Savings Bank stock—Liquidation Fund:

Cash		1,436.00
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Sundry Funds:

Investments	\$ 12,150.00	
Cash	822.68	12,972.68

GENERAL FUND

Investments	\$ 120,024.67	
Investments—in suspense	3,980.00	
In Suspense:		
Cost of Fire Pump	8,864.11	
United States Victory Loan Bonds 4¼%		
Purchased for account of employes	474.60	133,343.38

Collections—cash purchases only	\$ 733,790.88	
The Library—books, pamphlets and binding	47,366.43	781,157.31

Woman's Temple Realization Fund:

Investments	\$ 298,045.50	
In suspense	129,612.61	
Advances to other funds:		
Building Fund	146,181.69	
James Simpson Theatre Fund	49,818.31	
Illinois Central Foot-bridge Fund	17,175.48	
Accrued interest	427.71	
Cash	17.67	641,278.97

Cases, bases, office furniture, etc.	\$ 348,104.42	
Printing presses and type	2,876.20	
Photographic equipment	3,804.83	354,785.45

Cash:

General Fund in Treasurer's hands	\$ 6,004.85	
Payroll Fund in Treasurer's hands	2,000.00	
Petty Cash in office	739.95	
In Suspense (Foreign Exchange)	735.00	9,569.80

\$13,087,666.95

Edward E. Ayer Library Fund:

Amount of Bequest		50,000.00
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Life Memberships Fund:

Amount of Fees paid	\$ 79,600.00	
Income from Investments	10,247.64	89,847.64

Huntington W. Jackson Library Fund:

Amount of Bequest	\$ 971.50	
Income from Investments	877.08	1,848.58

New Building Moving and Furnishing Fund:

Amount of Fund at December 31, 1920 . . .	\$ 99,925.69	
Income from Investments	13,404.79	113,330.48

Illinois Central Foot-bridge Fund:

Advances by Woman's Temple Realization Fund		17,175.48
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Illinois Trust & Savings Bank Stock—Liquidation Fund:

Interest Received		1,436.00
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Sundry Funds:

Amount of Sundry Funds at December 31, 1920		12,972.68
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CAPITAL

Balance as at January 1, 1920	\$1,793,955.71	
Less Deductions (Authorized)	20,742.57	
	<u>\$1,773,213.14</u>	
Addition to Capital during 1920	126,350.54	
Net Income for year 1920—General Fund . .	9,199.44	
Woman's Temple Realization Fund—Income		
Accrued	11,371.79	1,920,134.91
		<u>\$13,087,666.95</u>

STATEMENT OF INCOME AND EXPENSES.

General Income Account Year Ending December 31, 1920.

INCOME		
Admissions and Check Rooms	\$	135.70
Dues of Annual Members		590.00
South Park Commissioners		11,250.00
Sundry Receipts		141.31
Dividends and Interest Collected—General Fund		11,300.84
Woman's Temple Realization Fund—Income		15,135.00
Endowment Fund—Income	\$137,154.00	
Less amount transferred to Sinking Fund for 1920	5,500.00	131,654.00
		<u>\$170,206.85</u>
Contribution—Marshall Field		19,755.32
		<u>\$189,962.17</u>
EXPENSES		
Salaries	\$	82,690.60
Guard and Janitor Service		26,670.70
Fire Protection Service		3,199.79
Heat and Light		26,581.99
Packing Supplies		1,736.61
Maintenance Force and Supplies		21,933.95
General Expense		5,630.48
Department Installation Supplies		2,730.23
Printing and Photography Supplies		1,696.32
Publications		7,892.06
		<u>180,762.73</u>
Net Income for Year carried to Capital Account	\$	<u><u>9,199.44</u></u>

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION.

BALANCE SHEET

December 31, 1920.

ASSETS

Cases and Furniture	\$ 6,560.58	
Collections and Exhibits	1,195.72	
Investments—Endowment Fund	275,000.00	
Investments—Reserve Fund	29,080.00	
Cash:		
Endowment Fund	\$748.47	
Reserve Fund	262.95	
Petty Cash	250.00	1,261.42
		<u>\$313,097.72</u>

LIABILITIES

Endowment Fund		\$275,000.00
Reserve Fund:		
Balance December 31, 1919	\$ 8,120.78	
Income for the year 1920	1,209.67	
Amount transferred from Income Account	3,663.74	12,994.19
Surplus:		
Balance December 31, 1920		25,103.53
		<u>\$313,097.72</u>

STATEMENT OF INCOME AND EXPENSES FOR YEAR 1920.

INCOME

Interest and Dividends on Investments	\$13,434.48	
Interest on Bank Balances	71.70	\$13,506.18

EXPENSES

Group Accessories	\$ 20.39	
Field Work	44.08	
Expense of Distribution of Cases to Public Schools	2,018.12	
Salaries and Expenses	7,176.10	9,258.69
Gross Income		\$ 4,247.49
Deduction from Income (Depreciation of Automobile Delivery Car)		583.75
Balance transferred to Reserve Fund		<u>\$ 3,663.74</u>

CERTIFICATES OF AUDIT

January 12, 1921.

We have audited the accounts and records of Field Museum of Natural History for the year ending December 31, 1920, and certify that the foregoing Balance Sheet and Income Account for the year are in accordance therewith.

All the income from investments has been accounted for. The securities representing the invested portions of the various funds were verified by us and also the uninvested cash balances of the respective funds and petty cash funds.

All disbursements for the year have been examined and found to be supported by properly authorized vouchers and warrants.

ARTHUR YOUNG & COMPANY

Certified Public Accountants.

January 12, 1921.

We have audited the books of the N. W. Harris Public School Extension of Field Museum for the year ending December 31, 1920, and certify that the foregoing Balance Sheet and Income Account for the year are in accordance therewith.

The investment securities have been verified by us. All income from these securities has been accounted for. The cash in bank and on hand at December 31, 1920, has been verified by us.

We have examined all disbursements for the year and found them evidenced by duly authorized vouchers and warrants.

ARTHUR YOUNG & COMPANY

Certified Public Accountants.

ACCESSIONS.

DEPARTMENT OF ANTHROPOLOGY.

AYER, E. E., Chicago, Illinois.

- 1 Moro kris in wooden sheath—Philippine Islands (gift).
- 1 Pima basket with black designs—California (gift).
- 1 steatite kettle, 1 ivory snow-knife, 1 Eskimo ivory tobacco-pipe, 1 modern oil dish, 2 Tlingit rattles—Eskimo and Tlingit, Alaska (gift).
- 1 Pomo feather head-band—California (gift).

BIGGAR, H. HOWARD, Bureau of Plant Industry, United States Department of Agriculture, Bloomington, Illinois.

- 13 varieties of maize-cobs cultivated by American Indians (gift).

CROFTS, GEORGE, Tientsin, China.

- 2 clay statuettes of the T'ang period—China (gift).

ELLIOTT, MRS.

- 17 miscellaneous baskets and 1 coconut shell in net—Northwest Coast, California, Arizona, India, etc. (gift).

ENGLISH, EVELYN, Chicago, Illinois.

- 1 Navaho saddle-blanket obtained from Ute tribe (gift).
- 1 piece of Rio Grande Pueblo painted pottery—Santa Fe, New Mexico (gift).
- 1 piece of Rio Grande Pueblo black pottery—Santa Clara, New Mexico (gift).

GILLETTE, MR. and MRS. EDWIN F., Chicago, Illinois.

- 1 set of nine ancient dolls representing emperor and empress of Japan, surrounded by guards and orchestra of five musicians, all dressed in brocade, with painted screen as background—Tokyo, Japan (gift).

HARPER, MRS. PAUL V., Chicago, Illinois.

Collected by Bishop Vincent:

- 2 Chimu pottery vases—North Coast, Peru (gift).

HEYER, GEORGE G., New York City.

- 239 specimens of archaeological material, chiefly of shell and bone—San Nicholas and San Miguel islands, California (gift).

HUDSON, DR. J. W., Ukiah, California.

- 1 polished stone hatchet—Port Discovery, Washington (gift).

McCAULEY, MRS. CHARLES A. H., Highland Park, Illinois.

- 1 Sioux peace-pipe—Dakota (gift).

MELCHIOR, J. E., Hankow, China.

- 2 Chinese pottery jars—China (gift).

RISDON, MRS. AMBROSE, Chicago, Illinois.

- 1 Japanese dagger (gift).
- 1 dagger and 1 bridle from Palestine (gift).
- 1 clay lamp from Ephesus (gift).
- 1 statuette and 1 necklace from Egypt (gift).
- 2 glass-bead necklaces from Cairo (gift).
- 4 fragmentary pieces of pottery—Mexico (gift).

SARGENT, HOMER E., Pasadena, California.

342 Indian baskets—California and British Columbia (gift).

SKIPF, DR. F. J. V., Chicago, Illinois.

2 prehistoric flint arrowheads—Rosiclare, Illinois (gift).

THOMAS, CHARLES B., Chicago, Illinois.

1 large celt of basaltic rock—Glenwood, Illinois (gift).

TISSERA, VINCENT L. (deceased), from W. N. GREEN, Chicago, Illinois.

1 silver jewel casket—Ceylon (gift).

WRIGLEY, WILLIAM J., JR. (from George G. Heye), Chicago, Illinois.

600 (approximately) archaeological specimens, chiefly implements of steatite and other stone, bone, shell and clay—Catalina Island, California (gift).

DEPARTMENT OF BOTANY.

AMES, OAKES, Bussey Institute, Boston, Massachusetts,

57 herbarium specimens of orchids—North Borneo (exchange).

BAILY, ALBERT L., Chicago.

3 herbarium specimens—Illinois (gift).

CHAMBERLAIN, CHARLES J., Chicago.

1 herbarium specimen—University of Chicago greenhouse (gift).

FIELD MUSEUM OF NATURAL HISTORY.

Collated by C. F. Millsbaugh:

91 herbarium specimens.

Purchases:

7 economic specimens—La Jolla, California.

1 Lycopodium powder from drug store.

1 economic specimen—Ceylon.

400 herbarium specimens—Bolivia.

Mrs. Stanley Field Plant Reproduction Laboratory:

11 herbarium specimens—various localities.

1 reproduction of enlarged flowers of *Cocos nucifera*.

8 reproductions of Algae.

11 plant reproductions: cotton flower enlarged, cotton plant in flower and fruit, *Strychnos*, enlarged flower, *Zamia*, enlarged flower and fruit, *Ulothrix*, Alga (4 micro. enlarged), Mango: "Mulgoba" fruit, "Haden" fruit, "Amiri" fruit.

FISHER, GEORGE L., Houston, Texas.

6 herbarium specimens—Santa Catalina Island, California (gift).

GRAY HERBARIUM, Harvard University, Cambridge, Massachusetts.

3 herbarium specimens—various localities (exchange).

MINER LABORATORIES, Chicago.

1 economic specimen of *Mucherus gum* (gift).

MOXLEY, GEORGE L., Los Angeles, California.

5 herbarium specimens—Santa Catalina Island, California (gift).

12 herbarium specimens—California (gift).

NEW YORK BOTANICAL GARDEN, Bronx Park, New York City.

33 herbarium specimens (exchange).

146 herbarium specimens (exchange).

Herbarium specimens—United States of Colombia (exchange).

PANCOAST, THOMAS B., Miami Beach Development Co., Miami, Florida.

1 cocoanut palm—Miami, Florida.

SULTAN DRUG COMPANY, St. Louis, Missouri.1 economic specimen of *Cactina pillets*—Mexico (gift).**UNITED STATES NATIONAL HERBARIUM, Smithsonian Institution, Washington, D. C.**

Herbarium specimens (exchange).

610 herbarium specimens (exchange).

518 herbarium specimens—Jamaica (exchange).

UNIVERSITY OF CALIFORNIA HERBARIUM, Berkeley, California.

6 herbarium specimens—Santa Catalina Island (exchange).

WILCOXSON, MRS. E. M., Chicago.

95 herbarium specimens—Massachusetts (gift).

DEPARTMENT OF GEOLOGY.**ARNOLD, DR. L. H., Chicago.**

1 specimen of gypsum geode—Colorado Springs, Colorado (gift).

AUMAN, JOHN P., Chicago.

2 specimens of crude and nodulized blast furnace flue dust—South Chicago (gift).

BASTIANI, D., Chicago.

2 specimens of tufa—Tuscany, Italy (gift).

CHALMERS, W. J., Chicago.

1 album of photographs of diamond mining—Kimberley, South Africa (gift).

1 specimen of crystallized quartz after spodumene—Greenwood, Maine (gift).

CHAIRMONT, DR. A. DE, Toledo, Ohio.

9 specimens of Holbrook meteorite—Holbrook, Arizona (gift).

COOPER, A. T., Webster, South Dakota.

7 specimens of free gold in silicified andesite, 1 specimen of tetrahedrite—Mills Mine, near Carbo, Sonora, Mexico (gift).

FIELD MUSEUM OF NATURAL HISTORY.

Collected by H. W. Nichols:

1 specimen of concretion, 1 specimen of ore—Schumacher, Ontario.

Purchases:

1 specimen section of Yenberrie meteorite—Yenberrie, North Australia.

GUNSAULUS, HELEN C., Chicago.

1 specimen of weather banded limestone—Lakeside, Michigan (gift).

NEW CORNELIA COPPER COMPANY, Ajo, Arizona.

11 specimens of copper ores—Ajo, Arizona (gift).

PHILLIPS COMPANY, W. S., Chicago.

1 specimen of oil shale—Parachute Creek, Colorado (gift).

1 specimen of bituminous limestone—Blue Island, Illinois (gift).

ROMANO, JOSPEH, Chicago.

1 specimen of pyrite—Jackson Park, Chicago (gift).

SKIFF, DR. FREDERICK J. V., Chicago.

277 specimens of ores and minerals—various localities (gift).

UNITED STATES NATIONAL MUSEUM, Washington, D. C.

1 cast of Yenberrie meteorite—Yenberrie, North Australia (gift).

UNITED VERDE COPPER COMPANY, Clarkdale, Arizona.

6 specimens of copper ores—Clarkdale, Arizona (gift).

6 specimens of copper ores—United Verde Mine, Jerome, Arizona (gift).

414 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

UNITED VERDE EXTENSION MINING COMPANY, Jerome, Arizona.

4 specimens of copper ores—Jerome, Arizona (gift).

UNIVERSITY OF CHICAGO, Chicago.

1 specimen of prepared skull of *Diceratherium*, 1 specimen dentition of *Diceratherium*—Agate, Nebraska (exchange).

1 skeleton of *Varanosaurus*—Texas (exchange).

DEPARTMENT OF ZOÖLOGY.

ABBAY, E. S., Chicago.

1 roach—Chicago (gift).

ARMSTRONG, EDWARD E., Chicago.

1 fly—Chicago (gift).

BAILEY, BERNARD, Elk River, Minnesota.

1 marmot, 1 pocket mouse, 6 bats (exchange).

BRANDLER, CHARLES, Chicago.

1 roach—Grant Park, Chicago (gift).

CONOVER, H. B., Chicago.

1 moose (skull and scalp), 2 caribou (skulls and scalps)—Yukon Territory (gift).

CORY, CHARLES B., Chicago.

1 free-tailed bat—Marshalltown, Iowa (gift).

FIELD MUSEUM OF NATURAL HISTORY.

Collected by W. H. Osgood:

1 grasshopper—Rio Cogollo (Perija), Venezuela.

Collected by W. H. Osgood and H. B. Conover:

408 mammals, 225 birds, 29 birds' eggs, 13 fishes, 1 frog—Venezuela.

LILJEBLAD, E., Chicago.

1 moth (and gall)—Mineral Springs, Indiana (gift).

1 moth—Chicago (gift).

NARBO, DR. S., Chicago.

20 birds' eggs—Stavanger, Norway (gift).

NEWBURY, MRS. MOLLIE NETCHER, Boston Store, Chicago.

1 mounted giraffe (gift).

OCHSNER, E. D., Prairie du Sac, Wisconsin.

1 least weasel (gift).

RYERSON, MARTIN A., and C. B. PIKE, Chicago.

1 albino striped gopher—Lake Geneva, Wisconsin (gift).

SONSHINE, MISS B., Chicago.

8,886 shells, 20 sea urchins, 14 starfish, 12 sand-dollars, 3 barnacles—California (gift).

VERES, GILBERT L., Lucena, Tayabas, Philippine Islands.

54 land shells—Philippine Islands (gift).

VIOSCA, PERCY, New Orleans, Louisiana.

270 specimens of salt and freshwater fishes—Southern Louisiana (exchange).

WILL, MISS JUANITA, Chicago.

1 jay (gift).

WILLIAMSON, E. B., Bluffton, Indiana.

1 paroquet—Western Venezuela (gift).

SECTION OF PHOTOGRAPHY.

FIELD MUSEUM OF NATURAL HISTORY.

Made by Section:

218 negatives, most of them made during moving period.

177 prints.

THE LIBRARY.

BOOKS, PAMPHLETS, AND SERIALS.

(ACCESSIONS ARE BY EXCHANGE UNLESS OTHERWISE DESIGNATED.)

AFRICA

Durban Museum	1
East Africa and Uganda Natural History Society, Nairobi	1
Geological Society, Johannesburg	1
Institut d'Egypte, Cairo	4
Institut de Carthage, Tunis	1
Rhodesia Scientific Association, Bulawayo	1
Royal Society of South Africa, Cape Town	1
South African Association for Advancement of Science, Cape Town	1
South African Botanical Survey, Pretoria	1
South African Department of Agriculture, Pretoria	2
South African Museum, Cape Town	3

ARGENTINA

Ministerio de Obras Publicas de la Provincia. Dirección de las Obras de Ameghino, La Plata	2
Museo de La Plata, Buenos Aires	5
Sociedad Ornitológica del Plata, Buenos Aires	1

AUSTRALIA

Australian Museum, Sydney	4
Australian Ornithologists' Union, Melbourne	1
Botanic Gardens and Government Domains, Sydney	1
Commonwealth of Australia, Adelaide	1
Department of Agriculture, Adelaide	1
Department of Agriculture, Sydney	1
Department of Agriculture, Wellington	1
Department of Mines, Sydney	2
Field Naturalists' Club, Melbourne	2
Fish Commission of New South Wales, Sydney	1
Forestry Commission, Sydney (gift)	2
Government of the Commonwealth, Melbourne	1
Institute of Science and Industry, Sydney	1
Linnean Society of New South Wales, Sydney	2
Melbourne University	1
National Herbarium, Melbourne	1
Public Library, Museum and Art Gallery, Adelaide	1
Public Library, Museums and National Gallery of Victoria, Melbourne	1
Queensland Museum, Brisbane	1
Queensland Royal Society, Brisbane	1
Royal Australasian Ornithologists' Union, Melbourne	1
Royal Society of New South Wales, Sydney	1

416 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

Royal Society of South Australia, Adelaide	2
Royal Society of Tasmania, Hobart	4
Royal Society of Victoria, Melbourne	2
Royal Society of Western Australia, Perth	1
Royal Zoölogical Society, Sydney	1
South Australia Ornithological Society, Adelaide	1
Technological Museum of New South Wales, Sydney	1
Victoria Department of Agriculture, Melbourne	2
Western Australia Geological Survey, Perth	5

BELGIUM

Académie Royale de Belgique, Brussels	3
Institut Botanique Leo Errera, Brussels	1
Jardin Botanique de l'Etat, Brussels	1
Musée du Congo, Brussels	1
Musée Royale d'Histoire Naturelle, Brussels	1
Société Royale d'Archéologie, Brussels	2

BRAZIL

Bibliotheca Nacional, Rio de Janeiro	1
Instituto Agronomico de Estado, Sao Paulo	1
Ministerio de Agricultura, Industria e Commercio, Rio de Janeiro	1
Museo Goeldi de Historia e Ethnographia, Para	1
Servico Geologico e Mineralogico, Rio de Janeiro	1

CANADA

Chief Game Guardian of Saskatchewan, Regina	1
Commission of Conservation, Ottawa	10
Department of Agriculture, Ottawa	9
Department of Agriculture, Victoria	1
Department of Marine and Fisheries, Ottawa	1
Department of Mines, Ottawa	5
Department of the Interior, Geological Survey, Ottawa	4
Entomological Society of Ontario, Toronto	2
Hamilton Association	1
Horticultural Societies of Ontario, Toronto	1
Nova Scotian Institute of Science, Halifax	1
Ontario Minister of Education, Toronto	1
Provincial Museum, Victoria	1
Royal Canadian Institute, Toronto	1
Royal Society of Canada, Ottawa	1
Société de Géographie, Quebec	1

CEYLON

Colombo Museum	1
Royal Botanic Garden, Peradeniya	1

CHILE

Biblioteca Nacional, Santiago de Chile	4
Museo de Etnologia y Antropologia de Chile, Santiago de Chile	1

CHINA

Botany and Forestry Department, Hong-Kong	1
Canton Christian College (gift)	1
Royal Asiatic Society of North China, Shanghai	1

DENMARK

Botanical Garden, Library, Copenhagen	1
Danske Kunstindustrimuseum, Copenhagen	1
K. Bibliothek, Copenhagen	1
Naturhistorisk Forening, Copenhagen	3
Societas pro Fauna et Flora Fennica, Helsingfors	5
Société Botanique, Copenhagen	1

ECUADOR

Sociedad Ecuatoriana de Estudios Historicos Americanos, Quito	2
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FEDERATED MALAY STATES

Federated Malay States Museum, Kuala Lumpur	7
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FRANCE

Académie des Sciences, Paris	2
Ecole d'Anthropologie, Paris	2
Musée d'Histoire Naturelle, Marseille	1
Muséum National d'Histoire Naturelle, Paris	2
LaNature, Paris	2
Société d'Etudes Scientifiques, Angers	1
Société d'Histoire Naturelle, Colmar	2
Société d'Horticulture, Paris	1
Société de Géographie, Paris	2
Société de Géographie, Toulouse	1
Société des Américanistes, Paris	1
Société Nationale d'Agriculture, Sciences et Arts, Angers	1
Université de Montpellier, Cette	1
Université de Rennes	7

GERMANY

Deutsche Dendrologische Gesellschaft, Bonn-Poppelsdorf	5
Geographische Gesellschaft in Hamburg	3
K. Sammlungen für Kunst und Wissenschaften, Dresden	4
Naturforschende Gesellschaft, Freiburg	1
Naturwissenschaftlicher Verein für Schleswig-Holstein, Kiel	1
Naturwissenschaftlicher Verein für Schwaben und Neuburg, Augsburg	1
Senckenbergische Naturforschende Gesellschaft, Frankfurt. a. M.	5

GREAT BRITAIN

Ashmolean Natural History Society of Oxfordshire, Oxford	1
Birmingham Natural History and Philosophical Society	14
Bristol Museum and Gallery	1
British Museum (Natural History), London	13
Cambridge Philosophical Society	2
Cambridge University Library	1
Dove Marine Laboratory, Cullercoats	2
Dumfriesshire and Galloway Natural History and Antiquarian Society, Dumfries	1
Fisheries Board, Edinburgh	2
Geographical Society, London	2
Geological Society, Edinburgh	1
Great Britain Geological Survey, London	1
Imperial Bureau of Entomology, London	2
Imperial College of Science and Technology, London	1

418 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

Lancashire Sea Fisheries Laboratories, Liverpool	2
Liverpool Biological Society	1
Manchester Geographical Society	1
Manchester Museum	1
Marine Biological Association, Plymouth	1
National Museum, Cardiff	1
Natural History Society, Glasgow	1
Oxford University Museum	3
Royal Botanic Gardens, Edinburgh	1
Royal Botanic Gardens, Kew	1
Royal Dublin Society	1
Royal Horticultural Society	1
Royal Scottish Museum, Edinburgh	1
Royal Society, London	1
Royal Society of Arts, London	1
Royal Society of Edinburgh	2
South London Entomological and Natural History Society	1
Tring Zoological Museum	1
Zoological Society of London	3
HUNGARY	
Magyar Ornithologiai Központ, Budapest	1
Museum Nationale Hungaricum, Budapest	1
INDIA	
Agri-Horticultural Society, Madras	4
Anthropological Society, Bombay	1
Archæological Survey, Allahabad	1
Archæological Survey, Burma	1
Archæological Survey, Calcutta	1
Archæological Survey, Eastern Circle, Patna	1
Archæological Survey, Frontier Circle, Preshawar	1
Botanical Survey, Calcutta	1
Department of Agriculture, Bombay	1
Department of Agriculture, Madras	1
Department of Agriculture, Pusa	1
Geological Survey, Calcutta	2
Government, Calcutta	2
Government Museum, Madras	5
Indian Museum, Calcutta	3
Jammer and Kashmir Archæological Survey, Jammer	1
Jnan-Bhandar Museum, Dayal Bagh	1
Journal of Indian Botany	1
National Indian Association, Calcutta (gift)	1
Trigonometrical Survey, Dehra Dun	2
IRELAND	
Natural History and Philosophical Society, Belfast	1
ITALY	
Accademia delle Scienze Fisiche e Matematiche, Naples	4
Accademia Giornia de Scienze Naturali, Catania	3
American Academy in Rome	1
Istituto Geografico de Agostini, Novara	1

Laboratorio de Zoologia Generale e Agraria, Portici	1
Musei de Zoologia ed Anatomia Comparata, Turin	4
Museo Civico di Storia Naturale, Genoa	1
R. Accademia delle Scienze, Turin	3
Società Geologica, Rome	1
Società Italiana d'Antropologia e Etnologia, Florence	2
Società Italiana de Scienze Naturali, Milan	2
Società Romana di Antropologia, Rome	1
Società Toscana di Scienze Naturali, Pisa	1

JAPAN

Akita Mining College	1
Bureau of Productive Industry Formosa Government, Taihoku	1
Geological Society, Tokyo	1
Imperial University of Tokyo, College of Agriculture	2
Imperial University of Tokyo, College of Science	2
Tokyo Botanical Society	2

JAVA

Bataviaasch Genootschap van Kunsten en Wetenschappen, Batavia	4
Department of Agriculture, Buitenzorg	5
Encyclopaedisch Bureau, Weltevreden	2
Jardin Botanique, Buitenzorg	1
K. Natuurkundige Vereeniging in Nederlandsch-Indie, Weltevreden	1

KOREA

Government-General Chosen, Seoul	1
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MEXICO

Director General de Estadística, Mexico	1
Instituto Geológico, Mexico	1
Sociedad Científica "Antonio Alzate," Mexico	1
Sociedad Geológica, Mexico	1
Sociedad Mexicana de Geografía y Estadística, Mexico	1

NETHERLANDS

Bataafsch Genootschap der Proefondervindelijke Wijsbegeerte, Rotterdam	1
K. Akademie van Wetenschappen, Amsterdam	2
K. Bibliotheek, The Hague	1
K. Instituut voor de Taal-Land-en Volkenkunde van Nederlandsch Indie, The Hague	1
K. Nederlandsch Aardijkundig Genootschap, Amsterdam	1
Nederlandsche Dierkundige Vereeniging, Leiden	2
Rijks Ethnographisch Museum, Leiden	1
Rijks Geologisch-Mineralogisch Museum, Leiden	1
Rijks Museum van Natuurlijke Historie, Leiden	1
Stadtsbibliotheek, Haarlem	1
Universiteit van Amsterdam	3

NEW ZEALAND

Acclimatisation Society, Wellington	1
Auckland Institute and Museum, Wellington	1
Department of Agriculture, Wellington	1
Department of Mines, Wellington	3
New Zealand Institute, Wellington	3

420 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

NORWAY

Bergen Museum	5
Norges Geologiske Undersøgelse, Christiania	16
Physiographiske Forening, Christiania	1
Tromsø Museum	8

PERU

Archivo Nacional	1
Biblioteca Nacional, Lima	1
Cuerpo de Ingenieros de Minas, Lima	1
Instituto Historico, Lima	1

PORTUGAL

Academia das Sciencias & Lisboa	1
Biblioteca Nacional, Lisbon	1
Sociedade de Lisboa	1
Société Portugaise des Sciences Naturelles, Lisbon	2

SPAIN

Broteria, Salamanca	1
Institució Catalana d'Historia Natural, Barcelona	1
Junta de Ciencias Naturals, Barcelona	5
Museo Nacional de Ciencias Naturales, Madrid	3
R. Academia de Ciencias y Artes, Barcelona	1
R. Academia de Ciencias Exactas, Fisicas y Naturales, Madrid	2
Sociedad Española de Historia Natural, Madrid	2

SWEDEN

K. Biblioteket, Stockholm	1
K. Svenska Vetenskapsakademien, Stockholm	4
K. Universitets Biblioteket, Uppsala	1
K. Vetenskaps-och Vitterhets-Samhälle, Göteborg	1
K. Vitterhets Historie och Antikvitets Akademien, Stockholm	1
Svenska Sällskapet för Antropologi och Geografi, Stockholm	1

SWITZERLAND

Botanic Garden, Zürich	1
Geographisch-Ethnographische Gesellschaft, Zürich	4
Historisches Museum, Bern	1
Musée d'Histoire Naturelle, Lausanne	2
Naturforschende Gesellschaft, Bern	3
Naturforschende Gesellschaft, Zürich	1
Société Entomologique, Bern	1
Société Fribourgeoise des Sciences Naturelles, Fribourg	1
Société Helvetique des Sciences Naturelles, Geneva	1
Société Neuchateloise de Géographie	2

URUGUAY

Archivo General Administrativo, Montevideo (gift)	1
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WEST INDIES

Academia Nacional de Artes y Letras, Havana (gift)	1
Biological Station of Bermuda	1
Imperial Department of Agriculture, Barbadoes	1
Jamaica Institute, Kingston	1
Trinidad and Tobago Department of Agriculture, Port of Spain	2
Universidad de Habana	2

Bertrand, Paul, Lille	10
Boyd, William, Winnipeg	1
Carpenter, G. H., Dublin	1
Dunod, H., Paris	2
Gamble, J. S., Madras	1
Guppy, H. B., Exeter	1
Huard, V. A., Quebec	2
Richter, Rudolf, Frankfurt a. M.	10
Rivet, P., Paris	3
Rutot, A., Brussels	2
Schinz, Hans, Zürich	1
Schlaginhaufen, Otto, Zürich	1
Schmidt, W., Vienna	2
Schreiter, Rudolfo, Tucuman	1
Swann, H. Kirke, London	2
Wille, N., Christiania	6

ALABAMA

Agricultural Experiment Station, Auburn	1
Alabama Anthropological Society, Montgomery	1
Alabama Geological Survey, University	2

ARIZONA

Agricultural Experiment Station, Tucson	2
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CALIFORNIA

Agricultural Experiment Station, Berkeley	1
California Academy of Sciences, San Francisco	1
Cooper Ornithological Club, Hollywood	1
Fish and Game Commission, San Francisco	1
Leland Stanford Junior University, Stanford University	6
Pomona College, Claremont	1
State Mining Bureau, Sacramento	4
University of California, Berkeley	9,

COLORADO

Bureau of Mines, Denver	1
Colorado Museum of Natural History, Denver	1

CONNECTICUT

Agricultural Experiment Station, New Haven	3
American Oriental Society, New Haven	1
Connecticut Academy of Arts and Sciences, New Haven	1
Hartford Public Library	2
State Board of Fisheries and Game, Hartford	1
State Forester, New Haven	1
Yale University, New Haven	2

GEORGIA

Geological Survey, Atlanta	1
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HAWAIIAN ISLANDS

Agricultural Experiment Station, Honolulu	1
Board of Commissions of Agriculture and Forestry, Honolulu	2
Hawaiian College, Honolulu	1
Hawaiian Entomological Society, Honolulu	1

422 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

IDAHO

Mining Industry, Boise	1
University of Idaho, Moscow	2

ILLINOIS

Agricultural Experiment Station, Urbana	2
Art Institute of Chicago	1
Chicago Historical Society	1
Department of Natural History, Urbana	1
Game and Fish Commission, Springfield	1
Hardwood Record, Chicago (gift)	1
John Crerar Library, Chicago	1
Lake Forest College	1
Lewis Institute, Chicago	1
Newberry Library, Chicago	1
Northwestern University, Evanston	1
Open Court Publishing Company, Chicago	1
State Board of Agriculture, Springfield	1
State Geological Survey, Urbana	6
State Historical Library, Springfield	1
State Museum, Springfield	1
Sweet, Wallach and Company, Chicago (gift)	1
University of Chicago	4
University of Illinois, Urbana	2

INDIANA

Agricultural Experiment Station, Lafayette	1
Department of Geology and Natural Resources, Indianapolis	1
Earlham College, Richmond	1
Indiana Academy of Science, Indianapolis	1
Indiana University, Bloomington	4
Purdue University, Lafayette	1
University of Notre Dame	1

IOWA

Geological Survey, Des Moines	1
Iowa Academy of Sciences, Des Moines	2
Iowa State College, Ames	1
Iowa State Historical Department, Des Moines	1
University of Iowa, Iowa City	3

KANSAS

Agricultural Experiment Station, Manhattan	3
Geological Survey, Lawrence	1
State Board of Agriculture, Topeka	1
University of Kansas, Lawrence	1

KENTUCKY

Department of Geology and Forestry, Frankfort	1
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LOUISIANA

Agricultural Experiment Station, Baton Rouge	1
State Museum, New Orleans	1

MAINE

Agricultural Experiment Station, Orono	1
Bowdoin College, Brunswick	2
Portland Public Library	1

MARYLAND

Agricultural Experiment Station, College Park	2
Horticultural Society, College Park	1
Johns Hopkins University, Baltimore	2
Maryland Institute, Baltimore	1

MASSACHUSETTS

Agricultural Experiment Station, Amherst	1
American Academy of Arts and Sciences, Boston	1
American Antiquarian Society, Boston	1
Amherst College	1
Archæological Institute of America, Boston	2
Boston Public Library	1
Boston Society of Natural History	1
Clark University, Worcester	1
Essex Institute, Salem	2
Harvard Museum of Comparative Zoology, Cambridge	3
Harvard University, Arnold Arboretum, Jamaica Plain	1
Museum of Fine Arts, Boston	2
New Bedford Public Library	2
Peabody Institute	1
Peabody Museum, Cambridge	2
Peabody Museum, Salem	1
Salem Public Library	1
Springfield City Library Association	1
Springfield Natural History Museum	1
Williams College, Williamstown	1

MICHIGAN

Agricultural Experiment Station, Agricultural College	1
Department of Parks and Boulevards, Detroit	1
Detroit Institute of Art	1
Grand Rapids Public Library	2
Michigan College of Mines, Houghton	1
Michigan State Library, Lansing	1
State Board of Library Commissions, Lansing	1
University of Michigan, Ann Arbor	2

MINNESOTA

Agricultural Experiment Station, St. Paul	2
Minneapolis Institute of Fine Arts	1
Minnesota Geological Survey, Minneapolis	1
Minnesota Historical Society, St. Paul	2
St. Paul Institute	2
University of Minnesota, Minneapolis	2

MISSISSIPPI

State Geological Survey, Jackson	1
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MISSOURI

Association of Engineering Societies, St. Louis	1
Bureau of Geology and Mines, Jefferson City	1
City Art Museum, St. Louis	2
Missouri Botanical Garden, St. Louis	1
St. Louis Public Library	1

424 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

St. Louis University	1
State Historical Society, Columbia	2
Washington University, St. Louis	2
NEBRASKA	
Agricultural Experiment Station, Lincoln	1
University of Nebraska, Lincoln	1
NEVADA	
Agricultural Experiment Station, Carson City	3
NEW JERSEY	
Agricultural Experiment Station, Trenton	6
Department of Conservation and Development, Trenton	1
Newark Museum Association	2
Princeton University	1
Stevens Institute, Hoboken	1
NEW MEXICO	
School of Mines, Socorro	1
NEW YORK	
Agricultural Experiment Station, Geneva	3
American Geographical Society, New York	2
American Hellenic Society, New York City (gift)	1
American Institute of Mining Engineers, New York City	2
American Museum of Natural History, New York City	18
Asbestos and Mineral Corporation, New York City (gift)	1
Brooklyn Botanic Garden	2
Brooklyn Institute of Arts and Sciences	2
Buffalo Society of Natural History	1
Carnegie Foundation for the Advancement of Teaching, New York City (gift)	1
Columbia University, New York City	1
Cooper Union for the Advancement of Science and Art, New York City	1
Cornell University, Ithaca	4
Forest and Stream Publishing Company, New York City	1
Inter-American Magazine, New York City	1
Japan Society, New York City	1
Metropolitan Museum of Art, New York City	2
Museum of the American Indian, New York City	8
New York Academy of Sciences, New York City	1
New York Botanical Garden, New York City	1
New York Historical Society, New York City	1
Pratt Institute Free Library, Brooklyn	1
Public Library, New York City	1
State Library, Albany	1
State Museum, Albany	14
Staten Island Institute of Arts and Sciences, New York City	2
Stone Publishing Company, New York City	1
Zoological Society, New York City	2
NORTH CAROLINA	
Elisha Mitchell Scientific Society, Chapel Hill	1
Geological and Economic Survey, Raleigh	1
NORTH DAKOTA	
University of North Dakota, University	1

OHIO

Academy of Sciences, Columbus	1
Agricultural Experiment Station, Wooster	2
Cincinnati Museum Association	1
Cleveland Museum of Art	1
Cleveland Public Library	2
Denison University, Granville	1
Lloyd Library, Cincinnati	2
Oberlin College Library	2
State Archaeological and Historical Society, Columbus	1
State University, Columbus	11
University of Cincinnati	6
Wilson Ornithological Club, Oberlin	1

OREGON

Agricultural Experiment Station, Corvallis	1
University of Oregon, Eugene	2

PENNSYLVANIA

American Philosophical Society, Philadelphia	1
Aquatic Life	2
Association of Engineering Societies, Philadelphia	1
Bryn Mawr College	1
Carnegie Institute, Pittsburgh	2
Carnegie Library, Pittsburgh	3
Carnegie Museum, Pittsburgh	2
Delaware Ornithological Club, Philadelphia	1
Pennsylvania Museum and School of Industrial Art, Philadelphia	1
Philadelphia Academy of Natural Sciences	1
Philadelphia College of Pharmacy and Science	2
Philadelphia Commercial Museum	1
Sullivan Moss Society, Pittsburgh	1
Topographic and Geologic Survey, Harrisburg	1
University of Pennsylvania, Philadelphia	2
University of Pennsylvania Museum, Philadelphia	2
Wagner Free Institute of Science, Philadelphia	1
Wistar Institute of Anatomy and Biology, Philadelphia	10

PHILIPPINE ISLANDS

Bureau of Education, Manila	1
Department of Agriculture, Manila	2
Department of Interior, Bureau of Science, Manila	5

RHODE ISLAND

Agricultural Experiment Station, Kingston (gift)	1
Park Museum, Providence	1

SOUTH CAROLINA

Charleston Museum	1
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SOUTH DAKOTA

Agricultural Experiment Station, Brookings	1
State Geological Survey, Madison	1

TENNESSEE

State Board of Entomology, Nashville	1
State Geological Survey, Nashville	3

426 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

TEXAS

Agricultural Experiment Station, College Station	2
San Antonio Scientific Society	1

UTAH

University of Utah, State School of Mines, Salt Lake City	1
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VIRGINIA

State Library, Richmond	1
University of Virginia, Charlottesville	1
Virginia Geological Survey, Charlottesville	1
Virginia State Forester, Charlottesville	2

WASHINGTON

State Geological Survey, Seattle (gift)	1
Washington University, Seattle	14
Washington University, Historical Society, Seattle	2

WASHINGTON, D. C.

American Mining Congress (gift)	1
National Academy of Sciences	4
National Education Association (gift)	1
Pan American Union	2
United States Government	340

WISCONSIN

Agricultural Experiment Station, Madison	2
Archaeological Society, Milwaukee	1
Beloit College	2
State Historical Society, Madison	1
State Horticultural Society, Madison	2
University of Wisconsin, Madison	1

Ayer, Edward E., Chicago (gift)	89
Barnes, William, Decatur	1
Blatchley, W. S., Indianapolis	1
Casey, Thomas, Washington, D. C., (gift)	2
Chalmers, William J., Chicago (gift)	2
Cockerell, T. D. A., Boulder	10
Eigenmann, Carl H., Bloomington	1
Evans, Alexander W., New Haven	2
Farwell, John V., Chicago (gift)	1
Gerhard, W. J., Chicago	9
Gunsaulus Collection of Personalalia of Eminent Naturalists (gift)	3
Holland, W. J., Pittsburgh (gift)	1
Kroeber, A. L., Berkeley	1
Laufer, B., Chicago	6
MacCurdy, George Grant, Washington, D. C.	3
Malloch, John R., Urbana (gift)	2
Mason, John A., Chicago	2
Millspaugh, C. F., Chicago	30
Morgan, P. G., Wellington (gift)	6
Morse, Edward S., Salem	2
Osborn, Henry F., New York City	2
Purkney, Thomas, Chicago (gift)	1
Wood, Albert Casey, Chicago (gift)	1

ARTICLES OF INCORPORATION.

STATE OF ILLINOIS.

DEPARTMENT OF STATE.

WILLIAM H. HINRICHSEN, *Secretary of State.*

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

Whereas, a Certificate duly signed and acknowledged having been filed in the office of the Secretary of State, on the 16th day of September, A. D. 1893, for the organization of the COLUMBIAN MUSEUM OF CHICAGO, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereto attached.

Now, therefore, I, William H. Hinrichsen, Secretary of State of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said COLUMBIAN MUSEUM OF CHICAGO is a legally organized Corporation under the laws of this State.

In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of State. Done at the City of Springfield, this 16th day of September, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the United States the one hundred and eighteenth.

W. H. HINRICHSEN,
Secretary of State.

[SEAL.]

TO HON. WILLIAM H. HINRICHSEN,

SECRETARY OF STATE:

SIR:

We, the undersigned citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and that for the purposes of such organization we hereby state as follows, to-wit:

1. The name of such corporation is the "COLUMBIAN MUSEUM OF CHICAGO."

2. The object for which it is formed is for the accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating Art, Archaeology, Science and History.

3. The management of the aforesaid museum shall be vested in a Board of FIFTY (15) TRUSTEES, five of whom are to be elected every year.

4. The following named persons are hereby selected as the Trustees for the first year of its corporate existence:

Edward E. Ayer, Charles B. Farwell, George E. Adams, George R. Davis, Charles L. Hutchinson, Daniel H. Burnham, John A. Roche, M. C. Bullock, Emil G. Hirsch,

428 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

James W. Ellsworth, Allison V. Armour, O. F. Aldis, Edwin Walker, John C. Black and Frank W. Gunsaulus.

5. The location of the Museum is in the City of Chicago, County of Cook, and State of Illinois.

(Signed),

George E. Adams, C. B. Farwell, Sidney C. Eastman, F. W. Putnam, Robert McMurdy, Andrew Peterson, L. J. Gage, Charles L. Hutchinson, Ebeneser Buckingham, Andrew McNally, Edward E. Ayer, John M. Clark, Herman H. Kohlssat, George Schneider, Henry H. Getty, William R. Harper, Franklin H. Head, E. G. Keith, J. Irving Pearce, Asel F. Hatch, Henry Wade Rogers, Thomas B. Bryan, L. Z. Leiter, A. C. Bartlett, A. A. Sprague, A. C. McClurg, James W. Scott, Geo. F. Bissell, John R. Walsh, Chas. Fitzsimmons, John A. Roche, E. B. McCagg, Owen F. Aldis, Ferdinand W. Peck, James H. Dole, Joseph Stockton, Edward B. Butler, John McConnell, R. A. Waller, H. C. Chatfield-Taylor, A. Crawford, Wm. Sooy Smith, P. S. Peterson, John C. Black, Jno. J. Mitchell, C. F. Gunther, George R. Davis, Stephen A. Forbes, Robert W. Patterson, Jr., M. C. Bullock, Edwin Walker, George M. Pullman, William E. Curtis, James W. Ellsworth, William E. Hale, Wm. T. Baker, Martin A. Ryerson, Huntington W. Jackson, N. B. Ream, Norman Williams, Melville E. Stone, Bryan Lathrop, Eliphalet W. Blatchford, Philip D. Armour.

STATE OF ILLINOIS }
COOK COUNTY } ss.

I, G. R. MITCHELL, a NOTARY PUBLIC in and for said County, do hereby certify that the foregoing petitioners personally appeared before me and acknowledged severally that they signed the foregoing petition as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this 14th day of September, 1893.

G. R. MITCHELL,

[SEAL.]

NOTARY PUBLIC, COOK COUNTY, ILL.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the corporate members held the 25th day of June, 1894, the name of the COLUMBIAN MUSEUM was changed to FIELD COLUMBIAN MUSEUM. A certificate to this effect was filed June 26, 1894, in the office of the Secretary of State for Illinois.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the corporate members held the 8th day of November, 1905, the name of the FIELD COLUMBIAN MUSEUM was changed to FIELD MUSEUM OF NATURAL HISTORY. A certificate to this effect was filed November 10, 1905, in the office of the Secretary of State for Illinois.

CHANGE IN ARTICLE 3.

Pursuant to a resolution at a meeting of the corporate members held the 10th day of May, 1920, the management of FIELD MUSEUM OF NATURAL HISTORY shall be invested in a Board of TWENTY-ONE (21) TRUSTEES, who shall be elected in such manner and for such time and term of office as may be provided for by the By-Laws.

AMENDED BY-LAWS.

(JANUARY 1, 1921.)

ARTICLE 1.

MEMBERS.

SECTION 1. Members shall be of seven classes, Corporate Members, Honorary Members, Patrons, Life Members, Associate Members, Sustaining Members, and Annual Members.

SECTION 2. The Corporate Members shall consist of the persons named in the articles of incorporation, and of such other persons as shall be chosen from time to time by the Board of Trustees at any of its meetings, upon the recommendation of the Executive Committee; provided, that such person named in the articles of incorporation shall, within ninety days from the adoption of these By-Laws, and persons hereafter chosen as Corporate Members shall, within ninety days of their election, pay into the treasury the sum of twenty (\$20.00) dollars or more. Corporate Members becoming Life Members, Patrons or Honorary Members shall be exempt from dues. Annual meetings of said Corporate Members shall be held at the same place and on the same day that the annual meeting of the Board of Trustees is held.

SECTION 3. Honorary Members shall be chosen by the Board from among persons who have rendered eminent service to science, and only upon unanimous nomination of the Executive Committee. They shall be exempt from all dues.

SECTION 4. Patrons shall be chosen by the Board upon recommendation of the Executive Committee from among persons who have rendered eminent service to the Museum. They shall be exempt from all dues, and, by virtue of their election as Patrons, shall also be Corporate Members.

SECTION 5. Any person paying into the treasury the sum of five hundred (\$500.00) dollars, at any one time, shall, upon the unanimous vote of the Board, become a Life Member. Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees.

SECTION 6. Any person paying into the treasury of the Museum the sum of one hundred (\$100.00) dollars, at any one time, shall, upon the unanimous vote of the Board, become an Associate Member. Associate Members shall be entitled to: tickets admitting member and members of family, including non-resident home guests, all publications of the Museum, if so desired; reserved seats to all lectures and entertainments under the auspices of the Museum, provided reservation is requested in advance, and admission of holder of membership and accompanying party to all special exhibits and Museum functions day or evening.

SECTION 7. Sustaining Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of twenty-five (\$25.00) dollars, payable within thirty days after

notice of election and within thirty days after each recurring annual date. This Sustaining Membership entitles the member to free admission for the member and family to the Museum on any day and allows 25 admission coupons, which may be used by any one, the Annual Report and such other Museum documents or publications as may be requested in writing. When a Sustaining Member has paid the annual fee of \$25.00 for six years, such member shall be entitled to become an Associate Member.

SECTION 8. Annual Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of ten (\$10.00) dollars, payable within thirty days after each recurring annual date. An Annual Membership shall entitle the member to a card of admission for the member and family during all hours when the Museum is open to the public, and free admission for the member and family to all Museum lectures or entertainments. This membership will also entitle the holder to the courtesies of the membership privileges of every Museum of note in the United States and Canada, so long as the existing system of cooperative interchange of membership tickets shall be maintained, including tickets for any lectures given under the auspices of any of the Museums during a visit to the cities in which the cooperative museums are located.

ARTICLE II.

BOARD OF TRUSTEES.

SECTION 1. The Board of Trustees shall consist of twenty-one members. The respective members of the Board now in office, and those who shall hereafter be elected, shall hold office during life. Vacancies occurring in the Board shall be filled at a regular meeting of the Board, upon the nomination of the Executive Committee made at a preceding regular meeting of the Board, by a majority vote of the members of the Board.

SECTION 2. Regular meetings of the Board shall be held on the third Monday of each month. Special meetings may be called at any time by the President, and shall be called by the Secretary upon the written request of three Trustees. Five Trustees shall constitute a quorum, except for the election of officers or the adoption of the Annual Budget, when seven Trustees shall be required, but meetings may be adjourned by any less number from day to day, or to a day fixed, previous to the next regular meeting.

SECTION 3. Reasonable written notice, designating the time and place of holding meetings, shall be given by the Secretary.

ARTICLE III.

HONORARY TRUSTEES.

SECTION 1. As a mark of respect, and in appreciation of services performed for the Institution, those Trustees who by reason of inability, on account of change of residence, or for other cause or from indisposition to serve longer in such capacity shall resign their place upon the Board, may be elected, by a majority of those present at any regular meeting of the Board, an Honorary Trustee for life. Such Honorary Trustee will receive notice of all meetings of the Board of Trustees, whether regular or special, and will be expected to be present at all such meetings and participate in the deliberations thereof, but an Honorary Trustee shall not have the right to vote.

ARTICLE IV.

OFFICERS.

SECTION 1. The officers shall be a President, a First Vice-President, a Second Vice-President, a Secretary, an Assistant Secretary and a Treasurer. They shall be chosen by ballot by the Board of Trustees, a majority of those present and voting being necessary to elect. The President, the First Vice-President, and the Second Vice-President shall be chosen from among the members of the Board of Trustees. The meeting for the election of officers shall be held on the third Monday of January of each year, and shall be called the Annual Meeting.

SECTION 2. The officers shall hold office for one year, or until their successors are elected and qualified, but any officer may be removed at any regular meeting of the Board of Trustees by a vote of two-thirds of all the members of the Board. Vacancies in any office may be filled by the Board at any meeting.

SECTION 3. The officers shall perform such duties as ordinarily appertain to their respective offices, and such as shall be prescribed by the By-Laws, or designated from time to time by the Board of Trustees.

ARTICLE V.

THE TREASURER.

SECTION 1. The Treasurer shall be custodian of the funds of the Corporation except as hereinafter provided. He shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents. But no warrant shall be issued, except in conformity with a regularly prepared voucher, giving the name of the payee and stating the occasion for the expenditure, and verified and approved as hereinafter prescribed. It shall be no part of the duties of the Treasurer to see that the warrants have been issued in conformity with such vouchers.

SECTION 2. The securities and muniments of title belonging to the corporation shall be placed in the custody of some Trust Company of Chicago to be designated by the Board of Trustees, which Trust Company shall collect the income and principal of said securities as the same become due, and pay same to the Treasurer, except as hereinafter provided. Said Trust Company shall allow access to and deliver any or all securities or muniments of title to the joint order of the following officers, namely: The President or one of the Vice-Presidents, jointly with the Chairman, or one of the Vice-Chairmen, of the Finance Committee of the Museum.

SECTION 3. The Treasurer shall give bond in such amount, and with such sureties as shall be approved by the Board of Trustees.

SECTION 4. All vouchers executed for the payment of liabilities incurred in the administration of the Museum, shall be verified by the Auditor, and approved for payment by the Director, and a member of the Executive Committee. All vouchers executed for expenditures for the construction or reconstruction of the Museum building, or buildings, shall be verified by the Auditor and approved for payment by the Chairman of the Building Committee. All vouchers executed in connection with the investments of the Corporation, or, in any way having to do with

the endowment funds of the Corporation, shall be verified by the Auditor and approved for payment by the Chairman of the Finance Committee.

SECTION 5. The Harris Trust & Savings Bank of Chicago shall be Custodian of "The N. W. Harris Public School Extension of Field Museum" fund. The bank shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by the Vice-Presidents. But no warrant shall be issued, except in conformity with a regularly prepared voucher, giving the name of the payee and stating the occasion for the expenditure, and verified and approved by the Auditor, the Director, and a member of the Executive Committee. It shall be no part of the duties of the said Custodian to see that the warrants have been issued in conformity with such vouchers.

ARTICLE VI.

THE DIRECTOR.

SECTION 1. The Board of Trustees shall elect a Director of the Museum, who shall remain in office until his successor shall be elected. He shall have immediate charge and supervision of the Museum, and shall control the operations of the Institution, subject to the authority of the Board of Trustees and its Committees. The Director shall be the official medium of communication between the Board, or its Committees, and the scientific staff and maintenance force.

SECTION 2. There shall be four scientific departments of the Museum—Anthropology, Botany, Geology and Zoology; each under the charge of a Curator, subject to the authority of the Director. The Curators shall be appointed by the Board upon the recommendation of the Director, and shall serve during the pleasure of the Board. Subordinate staff officers in the scientific departments shall be appointed and removed by the Director upon the recommendation of the Curators of the respective Departments. The Director shall have authority to employ and remove all other employees of the Museum.

SECTION 3. The Director shall make report to the Board at each regular meeting, recounting the operations of the Museum for the previous month. At the Annual Meeting, the Director shall make an Annual Report, reviewing the work of the Museum for the previous year, which Annual Report shall be published in pamphlet form for the information of the Trustees and Members, and for free distribution in such number as the Board may direct.

ARTICLE VII.

AUDITOR.

SECTION 1. The Board shall appoint an Auditor, who shall hold his office during the pleasure of the Board. He shall keep proper books of account, setting forth the financial condition and transactions of the Corporation, and of the Museum, and report thereon at each regular meeting, and at such other times as may be required by the Board. He shall certify to the correctness of all vouchers for the expenditure of the money of the Corporation.

ARTICLE VIII.

COMMITTEES.

SECTION 1. There shall be five Committees, as follows: Finance, Building, Auditing, Pension and Executive.

SECTION 2. The Finance Committee shall consist of five members, the Auditing and Pension Committees shall each consist of three members, and the Building Committee shall consist of five members. All members of these four Committees shall be elected by ballot by the Board at the Annual Meeting, and shall hold office for one year, and until their successors are elected and qualified. In electing the members of these Committees, the Board shall designate the Chairman and Vice-Chairman by the order in which the members are named in the respective Committee; the first member named shall be Chairman, the second named the Vice-Chairman, and the third named, Second Vice-Chairman, succession to the Chairmanship being in this order in the event of the absence or disability of the Chairman.

SECTION 3. The Executive Committee shall consist of the President of the Board, the Chairman of the Finance Committee, the Chairman of the Building Committee, the Chairman of the Auditing Committee, the Chairman of the Pension Committee, and three other members of the Board to be elected by ballot at the Annual Meeting.

SECTION 4. Four members shall constitute a quorum of the Executive Committee, and in all standing Committees two members shall constitute a quorum. In the event that, owing to the absence or inability of members, a quorum of the regularly elected members cannot be present at any meeting of any Committee, then the Chairman thereof, or his successor, as herein provided, may summon any members of the Board of Trustees to act in place of the absentee.

SECTION 5. The Finance Committee shall have supervision of investing the endowment and other permanent funds of the Corporation, and the care of such real estate as may become its property. It shall have authority to invest, sell, and reinvest funds, subject to the approval of the Board.

SECTION 6. The Building Committee shall have supervision of the construction, reconstruction, and extension of any and all buildings used for Museum purposes.

SECTION 7. The Executive Committee shall be called together from time to time as the Chairman may consider necessary, or as he may be requested to do by three members of the Committee, to act upon such matters affecting the administration of the Museum as cannot await consideration at the Regular Monthly Meetings of the Board of Trustees. It shall, before the beginning of each fiscal year, prepare and submit to the Board an itemized Budget, setting forth the probable receipts from all sources for the ensuing year, and make recommendations as to the expenditures which should be made for routine maintenance and fixed charges. Upon the adoption of the Budget by the Board, the expenditures as stated are authorized.

SECTION 8. The Auditing Committee shall have supervision over all accounting and bookkeeping, and full control of the financial records. It shall cause the same, once each year, or oftener, to be examined by an expert individual or firm, and shall transmit the report of such expert individual or firm to the Board at the next ensuing regular meeting after such examination shall have taken place.

SECTION 9. The Pension Committee shall determine by such means and processes as shall be established by the Board of Trustees to whom and in what amount the Pension Fund shall be distributed. These determinations or findings shall be subject to the approval of the Board of Trustees.

SECTION 10. The Chairman of each Committee shall report the acts and proceedings thereof at the next ensuing regular meeting of the Board.

SECTION 11. The President shall be ex-officio a member of all Committees and Chairman of the Executive Committee. Vacancies occurring in any Committee may be filled by ballot at any regular meeting of the Board.

ARTICLE IX.

NOMINATING COMMITTEE.

SECTION 1. At the November meeting of the Board, each year a Nominating Committee of three shall be chosen by lot. Said Committee shall make nominations for membership of the Finance Committee, the Building Committee, the Auditing Committee, and the Pension Committee, and for three members of the Executive Committee, from among the Trustees, to be submitted at the ensuing December meeting and voted upon at the following Annual Meeting in January.

ARTICLE X.

SECTION 1. Whenever the word "Museum" is employed in the By-Laws of the Corporation, it shall be taken to mean the building in which the Museum as an Institution is located and operated, the material exhibited, the material in study collections, or in storage, furniture, fixtures, cases, tools, records, books, and all appurtenances of the Institution, and the workings, researches, installations, expenditures, field work, laboratories, library, publications, lecture courses, and all scientific and maintenance activities.

SECTION 2. These By-Laws may be amended at any regular meeting of the Board of Trustees by a two-thirds vote of all the members present, provided the amendment shall have been proposed at a preceding regular meeting.

HONORARY MEMBERS.

AYER, EDWARD E.	CORY, CHARLES B.
BLACKSTONE, MRS. TIMOTHY B.	FIELD, STANLEY
	McCORMICK, STANLEY

PATRONS.

ARMOUR, ALLISON V.	MANIERRE, GEORGE
BUTLER, EDWARD B.	MARKHAM, CHARLES H.
COLLINS, ALFRED M.	MILLER, JOHN S.
DAY, LEE GARNETT	PAYNE, JOHN BARTON
GRAHAM, ERNEST R.	SARGENT, HOMER E.
GUNSAULUS, FRANK W.	SIMPSON, JAMES
HUTCHINSON, CHARLES L.	SKIFF, FREDERICK J. V.
KENNEDY, VERNON SHAW	SMITH, WILLARD A.
	WILSON, JOHN P.

CORPORATE MEMBERS.

ALDIS, OWEN F.
ARMOUR, ALLISON V.
AYER, EDWARD E.

BARTLETT, A. C.
BLAIR, WATSON F.
BORDEN, JOHN
BUTLER, EDWARD B.

CHALMERS, W. J.
CHATFIELD-TAYLOR, H. C.
COLLINS, ALFRED M.
CRANE, RICHARD T., Jr.

DAY, LEE GARNETT

EASTMAN, SIDNEY C.
ELLSWORTH, JAMES W.

FIELD, MARSHALL
FIELD, STANLEY

GAGE, LYMAN J.
GRAHAM, ERNEST R.
GUNSAULUS, FRANK W.

HARRIS, ALBERT W.
HUTCHINSON, CHARLES L.

JONES, ARTHUR B.

KEEP, CHAUNCEY
KENNEDY, VERNON SHAW
KOHLSAAT, HERMAN H.

McCORMICK, CYRUS H.
MANIERRE, GEORGE
MARKHAM, CHARLES H.
MILLER, JOHN S.
MITCHELL, JOHN J.

PAYNE, JOHN BARTON
PECK, FERDINAND W.
PORTER, GEORGE F.

RYERSON, MARTIN A.

SARGENT, HOMER E.
SIMPSON, JAMES
SKIFF, FREDERICK J. V.
SMITH, SOLOMON A.
SMITH, WILLARD A.
SPRAGUE, ALBERT A.
STONE, MELVILLE E.

WILSON, JOHN P.
WRIGLEY, WILLIAM, Jr.

DECEASED, 1920.

GUNTHER, C. F.

LIFE MEMBERS.

ALDIS, ARTHUR T.
ALDIS, OWEN F.
ALLEN, BENJAMIN
ALLERTON, ROBERT H.
ARMOUR, A. WATSON

BAKER, MISS ISABELLE
BANKS, ALEXANDER F.
BARRELL, FINLEY
BARRETT, MRS. A. D.
BARRETT, ROBERT L.
BARTLETT, A. C.
BASSFORD, LOWELL C.
BEALE, WILLIAM G.
BECKER, A. G.
BILLINGS, C. K. G.
BILLINGS, FRANK
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BLAINE, MRS. EMMONS
BLAIR, HENRY A.
BLAIR, WATSON F.
BLOCK, P. D.
BOOTH, W. VERNON
BORDEN, JOHN
BOYNTON, C. T.
BRIDGE, NORMAN
BREWSTER, WALTER S.
BROWN, WILLIAM L.
BUCHANAN, D. W.
BUFFINGTON, EUGENE J.
BURNHAM, JOHN
BUTLER, EDWARD B.
BYLLESBY, H. M.

CARR, CLYDE M.
CARRY, EDWARD F.
CARTON, L. A.
CHALMERS, WILLIAM J.
CLARK, EUGENE B.
CLAY, JOHN
CLOW, WILLIAM E.
COBE, IRA M.
CRAMER, CORWITH
CRANE, CHARLES RICHARD
CRANE, RICHARD T., JR.

CROWELL, H. P.
CUDAHY, JOSEPH M.
CUMMINGS, D. MARK
CUNNINGHAM, FRANK S.

DAU, J. J.
DAWES, CHARLES G.
DAY, ALBERT M.
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DEERING, CHARLES
DEERING, JAMES
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DICK, ALBERT BLAKE
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DRAKE, TRACY C.

ECKHART, B. A.

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FERNALD, GUSTAVUS S.
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FIELD, STANLEY
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HUTCHINSON, C. L.

INSULL, SAMUEL

JELKE, JOHN F.
JOHNSON, MRS. ELIZABETH AYER
JOHNSON, FRANK S.
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JONES, DAVID B.
JONES, THOMAS D.

KEEP, CHAUNCEY
KELLER, THEODORE C.
KELLEY, WILLIAM V.
KING, FRANCIS
KING, JAMES G.
KIRK, WALTER RADCLIFFE

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MCCORMICK, HAROLD F.
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ALEXANDER
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MacVEAGH, FRANKLIN

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PALMER, POTTER
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PORTER, H. H.

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RUSSELL, EDWARD P.
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RYERSON, MARTIN A.

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SCOTT, JOHN W.
SHAFER, JOHN C.
SHEDD, JOHN G.
SIMPSON, JAMES
SMITH, ALEXANDER
SMITH, ORSON

SMITH, SOLOMON A.
SPOOR, JOHN A.
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STEWART, ROBERT W.
STOUT, FRANK D.
STRAWN, SILAS H.
STUART, ROBERT
STURGES, GEORGE
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WILLARD, ALONZO J.
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WILSON, THOMAS E.
WILSON, WALTER H.
WINSTON, GARRARD B.
WINTER, WALLACE C.
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WRIGLEY, WILLIAM, JR.

YATES, DAVID M.

DECEASED.

FULLER, WILLIAM A.
PIKE, EUGENE S.

STILLWELL, HOMER A.
THORNE, GEORGE R.

ANNUAL MEMBERS.

ADAMS, CYRUS H.
ADAMS, MILWARD
ARMOUR, GEORGE A.

BAILEY, EDWARD P.
BELDEN, JOSEPH G.
BOAL, CHARLES T.
BURLEY, CLARENCE A.

COMSTOCK, WILLIAM C.
COONLEY-WARD, MRS. L. A.
CUMMINGS, E. A.
CURTIS, FRANCES H.

EISENDRATH, W. N.

FRANK, HENRY L.
FULLER, O. F.

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GURLEY, W. W.

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JONES, J. S.

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LINCOLN, ROBERT T.
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LOGAN, F. G.

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PEARSON, EUGENE H.

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WACKER, CHARLES H.
WALKER, JAMES R.
WALLER, EDWARD C.
WHITEHEAD, W. M.
WILSON, MRS. E. C.
WILSON, M. H.
WORCESTER, MRS. C. H.

DECEASED.

FÜRST, CONRAD
HIBBARD, WILLIAM G., JR.

MacFARLAND, HENRY J.

INDEX TO ILLUSTRATIONS

VOLUME V—REPORT SERIES

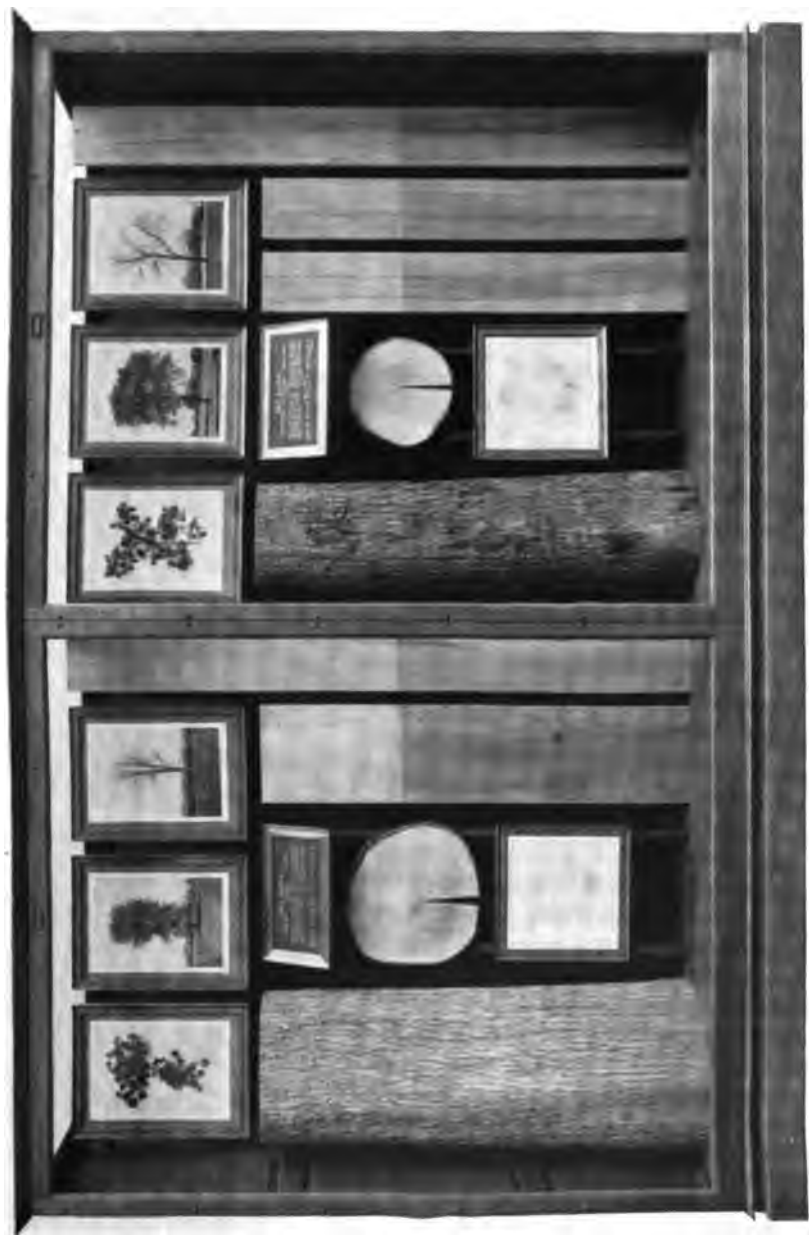
	Plate No.	Opposite Page
The Late Norman B. Ream.....	I	1
North American Forestry.....	II	8
Imperial Chinese Jade Seal.....	III	14
Skeleton of Fossil Saber-Tooth Tiger. Los Angeles Asphalt Beds	IV	18
Figure of Woman from Kukunor Region, in Festive Costume	V	21
Model of Gold Mine.....	VI	24
Group of American Flamingoes. Great Inagua Island, Bahamas	VII	28
Exhibit of the N. W. Harris Public School Extension of Field Museum of Natural History at the Panama-Pacific International Exposition, San Francisco, 1915	VIII	30
Exhibition of Shells	IX	32
A Case of Antique Glass in North Court. Showing New Method of Shelf Installation	X	40
Group of Oil Birds, Trinidad Island, W. I.	XI	45
Model of Magnified Section of Wood.....	XII	60
Group of Screamers. Lake Maracalbo, Venezuela, S. A.	XIII	68
Old Hopi Balulukon Screen with Pictorial Symbols on Canvas	XIV	74
The Late Seth E. Meek.....	XV	75
Skeleton of Fossil American Camel. Lower Miocene of Wyoming	XVI	85
Type Case. North American Forestry.....	XVII	90
Model of the So-called Porcelain Pagoda of Nanking....	XVIII	94
Type of Case Loaned to the Public School by the N. W. Harris Public School Extension of Field Museum....	XIX	100
Chinese Gateway Carved from Teakwood.....	XX	105
Restoration of Jaw of Fossil Shark, with Jaw of Modern Shark for Comparison.....	XXI	111
Group of Alaskan Moose.....	XXII	117
Jade Antiquities from Mexico.....	XXIII	121
Collection Illustrating By-products of Gas Manufacture..	XXIV	125
Brass Cannon, So-called Lantaka, Captured from the Moro, Philippines	XXV	130
Bird Life in Northern Brazil.....	XXVI	141
The Late George E. Adams.....	XXVI	147
The Late Henry Field.....	XXVII	152
Model Illustrating Conversion of a Glacial Lake to a Peat Bog	XXVIII	162
Portion of a Lotus Bed.....	XXIX	172
Bird-Life in Winter, in Illinois.....	XXX	180
Old Navaho Blanket of Bayeta.....	XXXI	186
Type of Case Loaned to Public Schools by the N. W. Harris Public School Extension of Field Museum	XXXII	192
Flowers of the Oat.....	XXXIII	198
Restoration of Broken Pottery.....	XXXIV	208
Bird-Life on Lake Michigan in Winter.....	XXXV	216
Skeleton of Fossil Wolf. Asphalt Beds, Los Angeles, California	XXXVI	222
Theodore Roosevelt	XXXVII	225
An Enlarged "Float" or "Bladder" of the Bladder-Weed..	XXXVIII	230
Hopi Masks of the Stanley McCormick Collections.....	XXXIX	242

	Opposite Plate No. Page
Posterior Half of a Skeleton of the Rare Oligocene Aquatic Rhinoceros	XL 262
Type of Case Loaned to the Public Schools by the N. W. Harris Public School Extension of Field Museum.....	XLI 268
Figure of Woman from Central Tibet, in Festive Attire..	XLII 262
Habitat Group. Ruffed Grouse ("Partridge").....	XLIII 270
A Trumpet Vine Reproduced in Glass and Wax.....	XLIV 276
Caryatid—By Henry Hering	XLV 296
Caryatid—By Henry Hering.....	XLVI 296
Anthropology—Low Relief Panel by Henry Hering.....	XLVII 296
Botany—Low Relief Panel by Henry Hering.....	XLVIII 296
Geology—Low Relief Panel by Henry Hering.....	XLIX 296
Zoology—Low Relief Panel by Henry Hering.....	L 296
Fire—Attic Figure by Henry Hering.....	LI 296
Earth—Attic Figure by Henry Hering.....	LII 296
Air—Attic Figure by Henry Hering.....	LIII 296
Water—Attic Figure by Henry Hering.....	LIV 296
North—Attic Figure by Henry Hering.....	LV 296
South—Attic Figure by Henry Hering.....	LVI 296
East—Attic Figure by Henry Hering.....	LVII 296
West—Attic Figure by Henry Hering.....	LVIII 296
Science—Figure in Central Hall by Henry Hering.....	LIX 296
Dissemination of Knowledge—Figure in Central Hall by Henry Hering	LX 296
Research—Figure in Central Hall by Henry Hering.....	LXI 296
Record—Figure in Central Hall by Henry Hering.....	LXII 296
Stanley Field Hall.....	LXIII 297
Gold Ear-Rings and Cast Figure of a Bird, Colombia, South America	LXIV 306
Gold Breastplates, Colombia, South America.....	LXV 310
Scorpions and Whip Scorpions.....	LXVI 313
Type of Case Loaned to Public School by the N. W. Harris Public School Extension of Field Museum.....	LXVII 330
Salish Blanket	LXVIII 334
Cloisonné Enamel Statue of Pal-Dan-Ye-She.....	LXIX 340
Solpugids, Tarantulas and Centipedes.....	LXX 352
Skeleton of Extinct Ungulate, South Dakota Bad Lands..	LXXI 360
Botanical Collecting in Florida.....	LXXII 364
Detail, Stanley Field Hall, Showing Statuary-Science and Dissemination of Knowledge.....	LXXIII 366
West Colonnade, Second Floor.....	LXXIV 366
West Colonnade Paralleling Stanley Field Hall.....	LXXV 366
Exhibition Hall	LXXVI 366
Frederick J. V. Skiff Hall.....	LXXVII 367
Moving Operations. Loading Cars at Jackson Park.....	LXXVIII 373
African Elephants in Transit to New Building.....	LXXIX 384
Moving Mounted Skeleton of Extinct Ungulate.....	LXXX 388
Gravity Tramway from Upper Galleries to Main Floor....	LXXXI 394
Natal Plum	LXXXII 398
Set of Japanese Dolls.....	LXXXIII 402
Restoration of Giant Extinct Bird.....	LXXXIV 414
Type of Case Loaned Public Schools by the N. W. Harris Public School Extension of Field Museum.....	LXXXV 426
American Bison	LXXXVI 434
Erecting Dinosaur Skeleton in New Building.....	LXXXVII 440

Note.—Each report has its own table of contents; see pages 1, 75, 147, 225, 299, and 371.



THE LATE NORMAN B. REAM
An Incorporator and Trustee of the Museum.

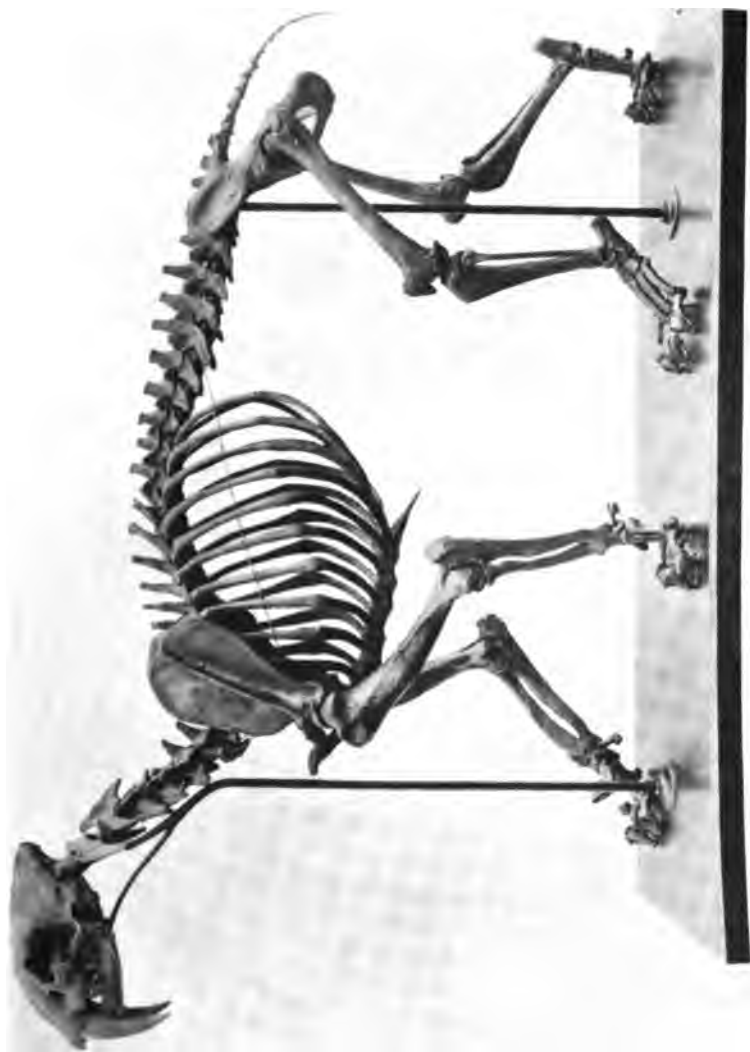


TYPE CASE — NORTH AMERICAN FORESTRY.

Each half case, or unit, is a complete monographic assemblage of elements combining to represent all characters of the tree and its lumber. The trunk specimens are in ratio size.



IMPERIAL CHINESE JADE SEAL CONFERRED UPON THE EMPRESS JUI ON FEBRUARY 12, 1796.
Gift of Fritz von Frantzius.

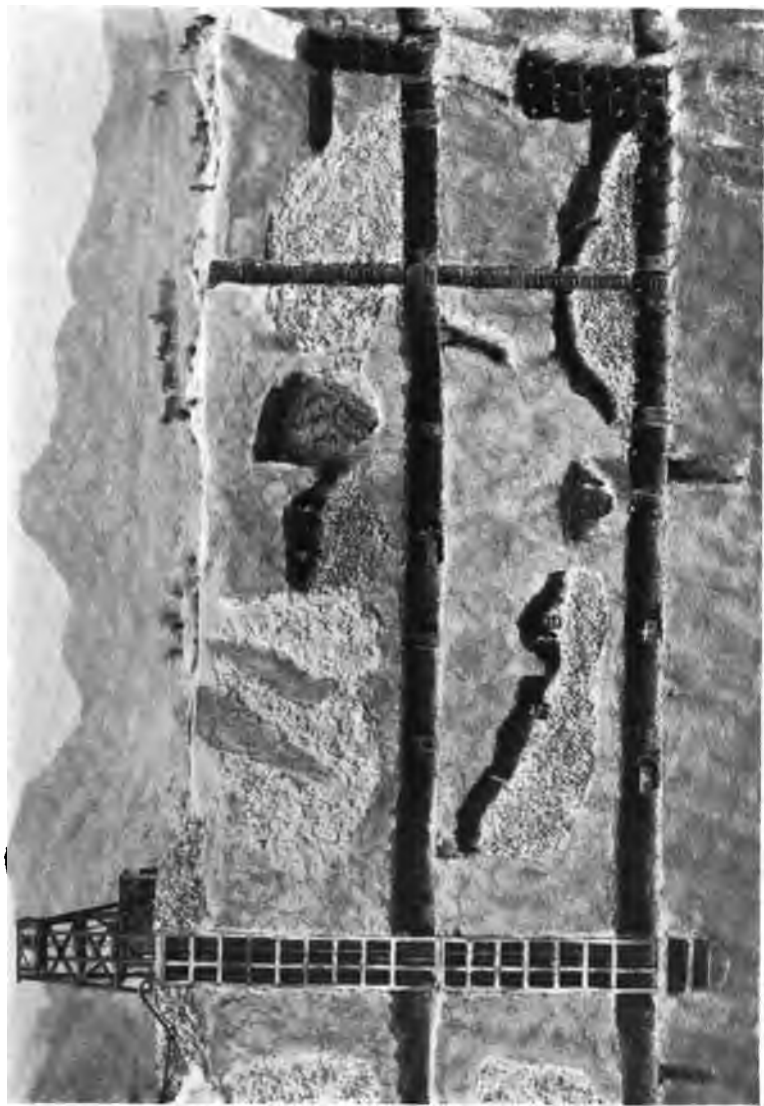


**SKELETON OF FOSSIL SABER-TOOTH TIGER (*SMILODON CALIFORNICUS*). LOS ANGELES ASPHALT BEDS,
LOS ANGELES, CALIFORNIA.**

Gift of Messrs. E. E. Ayer, E. B. Butler, W. R. Linn, and M. A. Ryerson.



FIGURE OF WOMAN FROM KUKUNOR REGION, IN FESTIVE COSTUME. FRONT AND BACK.



MODEL OF A GOLD MINE. X15.



GROUP OF AMERICAN FLAMINGOES. *PHOENICOPTERUS RUBER* (LINN).
Scene, Great Inagua Island, Bahamas.

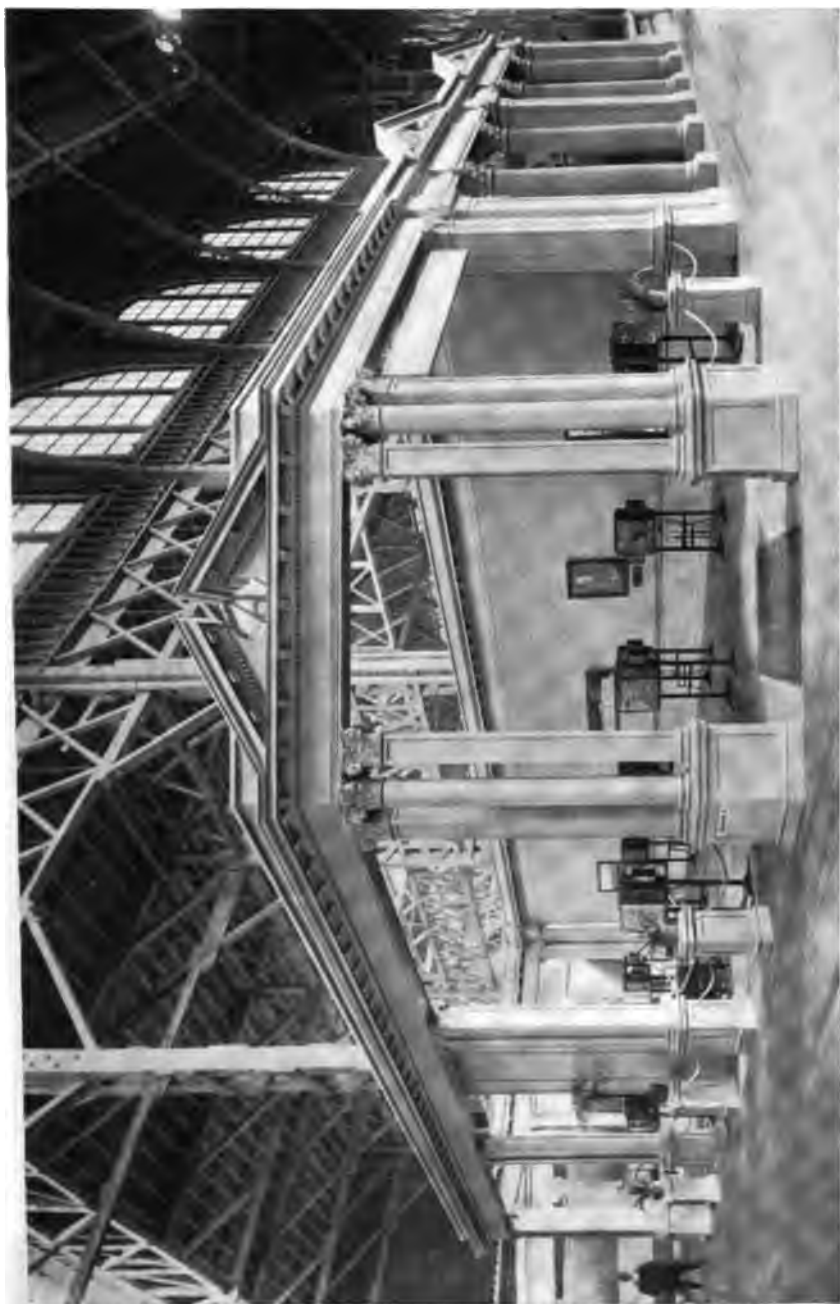
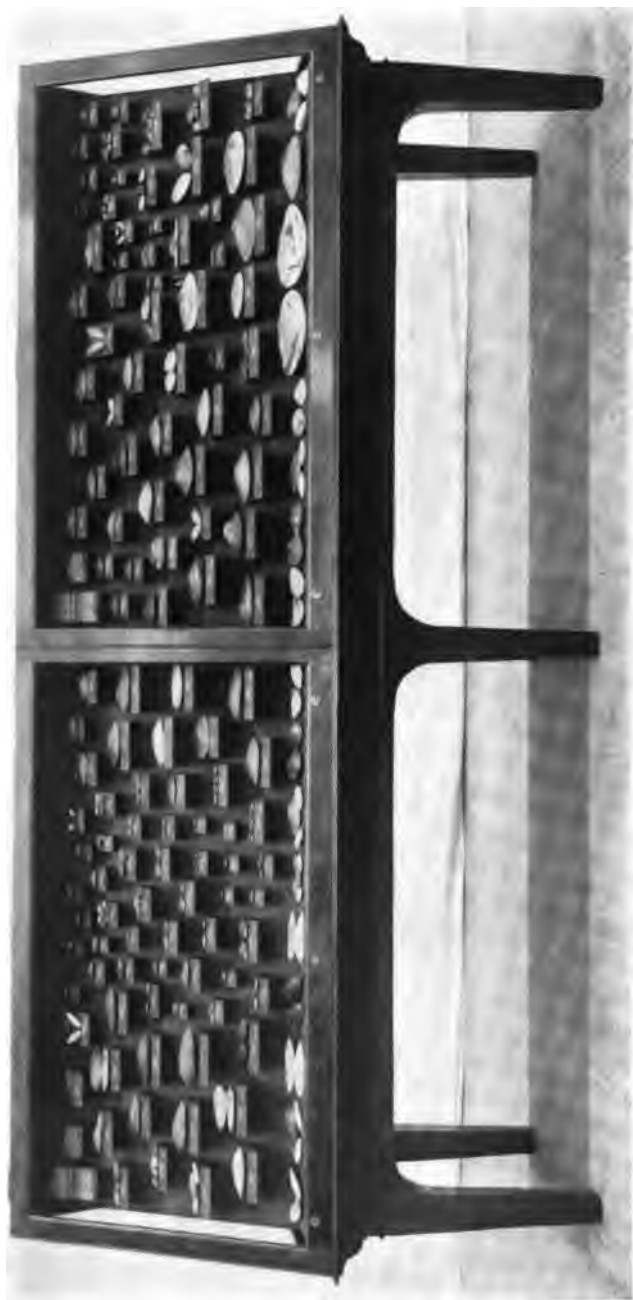


EXHIBIT OF THE N. W. HARRIS PUBLIC SCHOOL EXTENSION OF FIELD MUSEUM AT THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION,
SAN FRANCISCO, 1915.



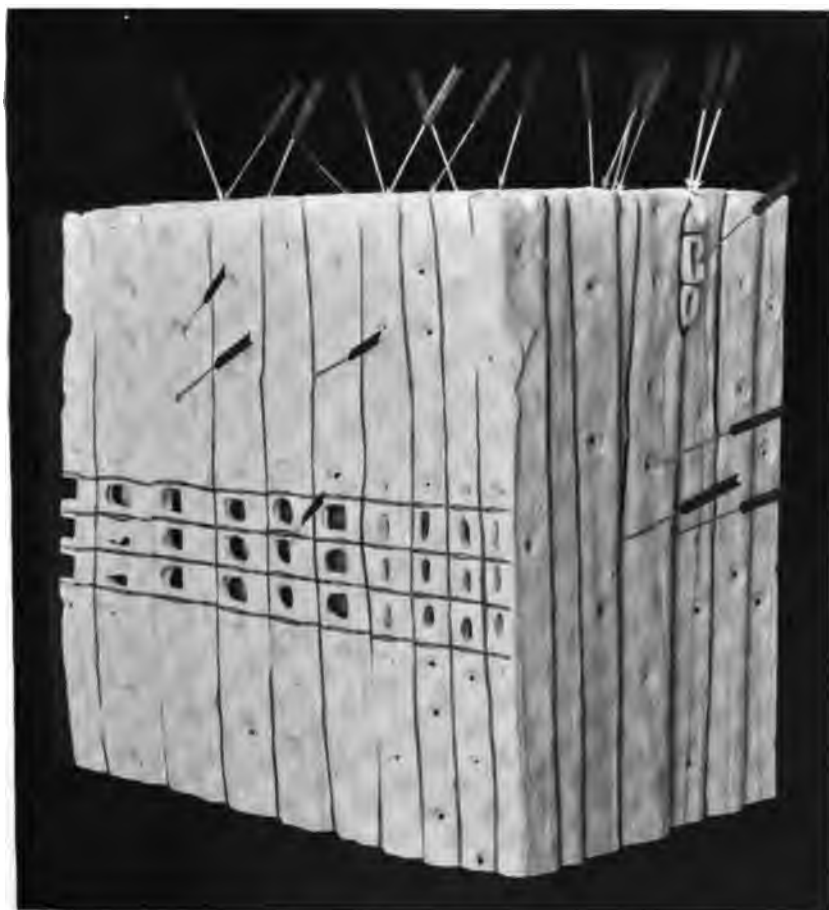
EXHIBITION CASE OF SHELLS.
Showing method of installation.



A CASE OF ANTIQUE GLASS IN NORTH COURT.
Showing new method of shelf installation.



GROUP OF OIL BIRDS. *STEATORNIS CARIPENSIS* (HUMBOLD)
Scene, section of cave, Trinidad Island, W. I.



MODEL OF A MAGNIFIED SECTION OF WOOD.

The designating labels are printed upon the feathered portion of arrows that point to the special structural element of the wood referred to.



GROUP OF SCREAMERS. *Palamedia cornuta* AND *Chauna chankaria* AND SCARLET IBIS *Guara rubra*.
Scene, Lake Maracaibo, Venezuela, S. A.



OLD HOPI BALULUKON SCREEN WITH PICTORIAL SYMBOLS ON CANVAS.
Gift of Stanley McCormick.



THE LATE SETH E. MEEK

Assistant Curator of Zoölogy from July 24, 1897 to July 6, 1914, the date of his death.



SKELETON OF FOSSIL AMERICAN CAMEL (*Oxydactylus longipes*). LOWER MIOCENE OF WYOMING.

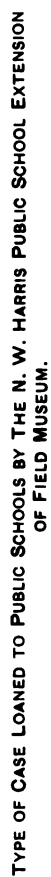


TYPE CASE. NORTH AMERICAN FORESTRY.

Method of installing timber specimens of the second class. In this installation the same ratio of size of trunk is maintained as in the timbers of the first class as seen in Plate II of this volume.



MODEL OF THE SO-CALLED PORCELAIN PAGODA OF NANKING.
Made by the Chinese Orphanage of Sikkawei near Shanghai.





CHINESE GATEWAY CARVED FROM TEAKWOOD.
Made by the Orphanage of Sikkawei near Shanghai.



RESTORATION OF JAW OF FOSSIL SHARK (*Carcharodon*), WITH JAW OF MODERN SHARK (WITHIN) FOR COMPARISON.



GROUP OF ALASKAN MOOSE *alces americanus gigas* (MILLER).



JADE ANTIQUITIES FROM MEXICO.



COLLECTION ILLUSTRATING BY-PRODUCTS OF GAS MANUFACTURE.

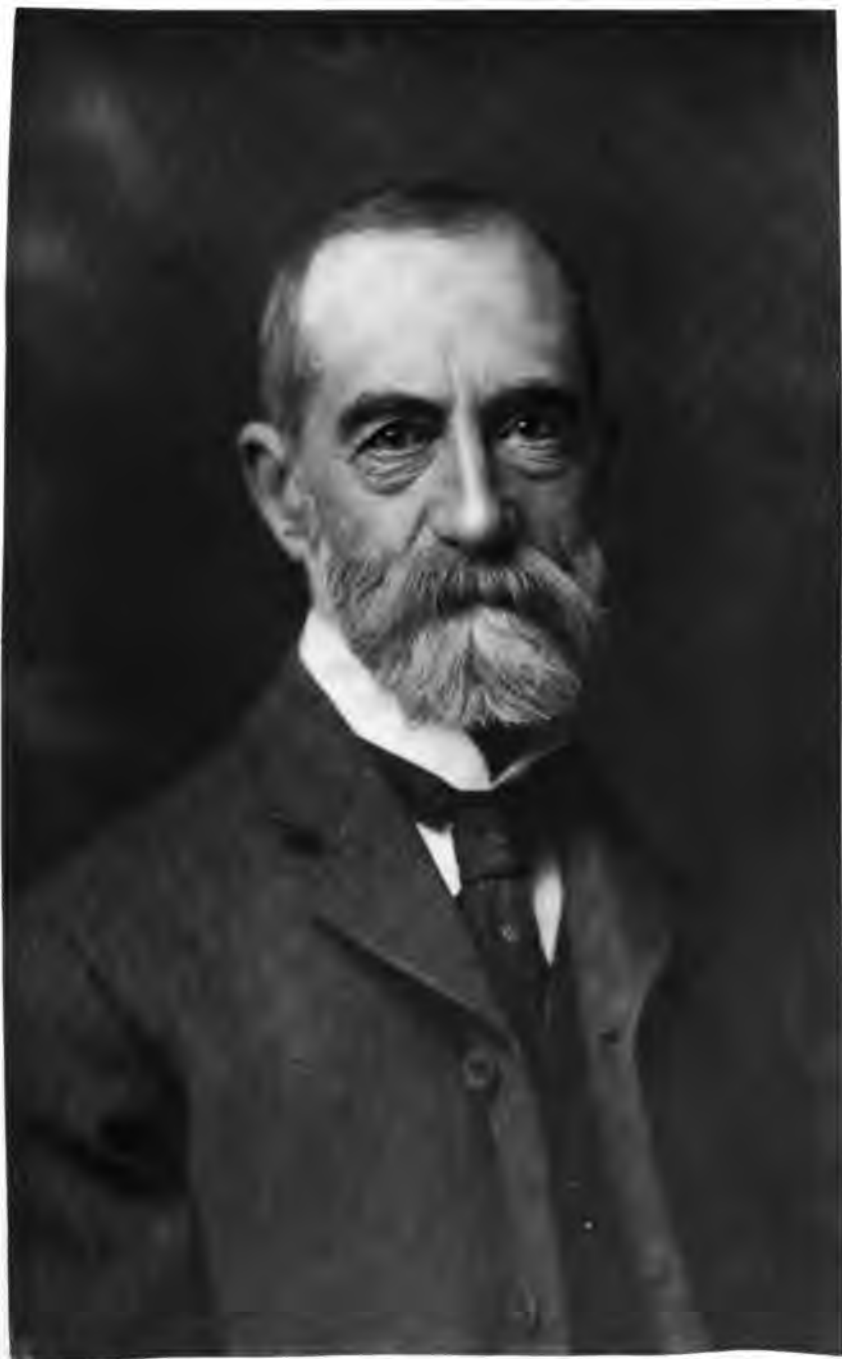


BRASS CANNON, SO-CALLED LANTAKA, CAPTURED FROM THE MORO, PHILIPPINES.
Gift of Edward E. Ayer.



BIRD LIFE IN NORTHERN BRAZIL.

JABIRU (LARGE BIRDS IN THE CENTER), SUN BITTERN (WITH WINGS SPREAD), BOAT-BILLED HERON (ON EXTREME RIGHT), IBISES, ETC.
Stanley Field Ornithology Fund.



THE LATE GEORGE E. ADAMS
An Incorporator and Trustee of the Museum



THE LATE HENRY FIELD
A Trustee of the Museum



MODEL ILLUSTRATING CONVERSION OF A GLACIAL LAKE TO A PEAT BOG
Scale, 30 feet equals one inch



PORTION OF A LOTUS BED
(*Nelumbo lutea*)

Reproduction of a small portion of a lotus bed at Grass Lake, Illinois, in representation of the natural habitat and characters of the species. This reproduction is five feet and a half long, with all the plant elements full natural size and in exact similitude to the plants as they grew during the season of 1917.



BIRD-LIFE IN WINTER IN ILLINOIS



OLD NAVAHO BLANKET OF BAYETA WITH GEOMETRIC DESIGNS IN WHITE, RED AND BLUE
Gift of Homer E. Sargent

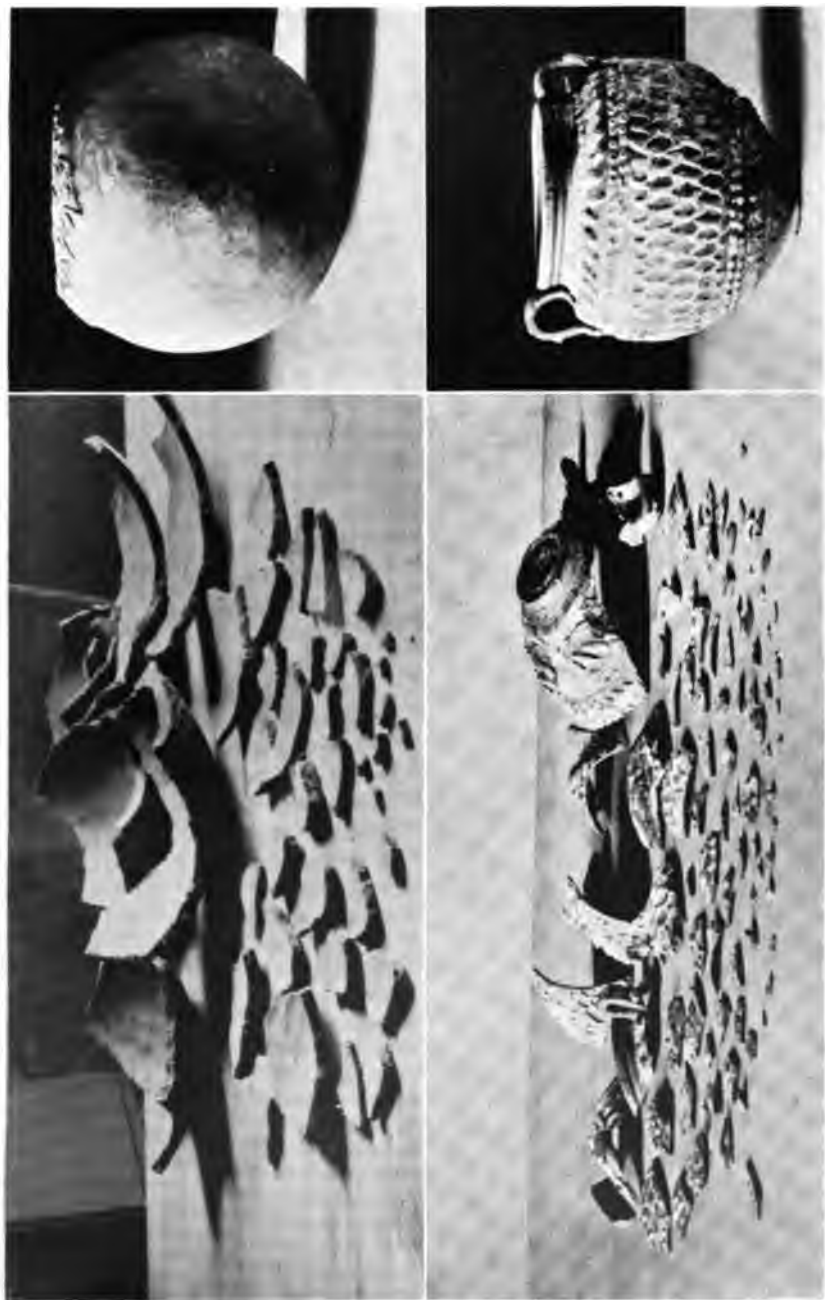


TYPE OF CASE LOANED TO PUBLIC SCHOOLS BY THE N. W. HARRIS PUBLIC SCHOOL EXTENSION OF FIELD MUSEUM



FLOWERS OF THE OAT
(*Avena sativa*)

A natural sized panicle and an enlarged spikelet showing the floral characters; together with a still greater enlargement of the essential organs and developing grain. Done in glass and wax to illustrate the flowering characteristics of the grasses.



RESTORATION OF BROKEN POTTERY IN THE REPAIR SECTION OF DEPARTMENT OF ANTHROPOLOGY

H. P. BURCH, Preparator.



BIRD-LIFE ON LAKE MICHIGAN IN WINTER



SKELETON OF FOSSIL WOLF (*Canis dirus*) LOS ANGELES ASPHALT BEDS
LOS ANGELES, CALIFORNIA



Photo. by Baker Art Gallery, Columbus, Ohio.
THEODORE ROOSEVELT.
NATURALIST.



AN ENLARGED "FLOAT" OR "BLADDER" OF THE BLADDER-WEED REPRODUCED IN GLASS AND NATURAL COLOR.

It illustrates the carnivorous character of the plant.



HOPÍ MASKS OF THE STANLEY MCCORMICK COLLECTIONS.
Showing method of installation



POSTERIOR HALF OF A SKELETON OF THE RARE OLIGOCENE AQUATIC RHINOCEROS,
METAMYNODON.

Collected in South Dakota by Museum Expedition of 1905.



TYPE OF CASE LOANED TO PUBLIC SCHOOLS BY THE N. W. HARRIS PUBLIC SCHOOL
EXTENSION OF FIELD MUSEUM.



FIGURE OF WOMAN FROM CENTRAL TIBET, IN FESTIVE ATTIRE.
COMPLETE WITH JEWELRY.



HABITAT GROUP
RUFFED GROUSE ("PARTRIDGE") *Bonasa umbellus* (LINN.)
A nesting pair disturbed by a Raccoon.



A TRUMPET-VINE REPRODUCED IN GLASS AND WAX.

A characteristic plant of the *Bignonia* Family. This reproduction is natural size and five feet high.



CARYATID—FIELD MUSEUM OF NATURAL HISTORY,
CHICAGO.

Henry Hering, Sculptor.



CARYATID—FIELD MUSEUM OF NATURAL HISTORY,
CHICAGO.

Henry Hering, Sculptor.



ANTHROPOLOGY—LOW RELIEF PANEL FOR FIELD MUSEUM OF NATURAL HISTORY, CHICAGO.
Henry Hering, Sculptor.



BOTANY—LOW RELIEF PANEL FOR FIELD MUSEUM OF NATURAL HISTORY, CHICAGO.
Henry Hering, Sculptor.



GEOLOGY—LOW RELIEF PANEL FOR FIELD MUSEUM OF NATURAL HISTORY, CHICAGO.
Henry Hering, Sculptor.



ZOOLOGY—LOW RELIEF PANEL FOR FIELD MUSEUM OF NATURAL HISTORY, CHICAGO.

Henry Hering, Sculptor.



**FIRE—ATTIC FIGURE FOR FIELD MUSEUM OF NATURAL
HISTORY, CHICAGO.**
Henry Hering, Sculptor.



EARTH—ATTIC FIGURE FOR FIELD MUSEUM OF NATURAL
HISTORY, CHICAGO.

Henry Hering, Sculptor.



AIR-ATTIC FIGURE FOR FIELD MUSEUM OF NATURAL
HISTORY, CHICAGO.

Henry Hering, Sculptor.



**WATER—ATTIC FIGURE FOR FIELD MUSEUM OF NATURAL
HISTORY, CHICAGO.**

Henry Hering, Sculptor.



NORTH—ATTIC FIGURE FOR FIELD MUSEUM OF NATURAL
HISTORY, CHICAGO.

Henry Hering, Sculptor.



**SOUTH-ATTIC FIGURE FOR FIELD MUSEUM OF NATURAL
HISTORY, CHICAGO.**

Henry Hering, Sculptor.



EAST- ATTIC FIGURE FOR FIELD MUSEUM OF NATURAL
HISTORY, CHICAGO.

Henry Hering, Sculptor.



WEST-ATTIC FIGURE FOR FIELD MUSEUM OF NATURAL
HISTORY, CHICAGO.

Henry Hering, Sculptor.



SCIENCE—FIGURE IN CENTRAL HALL OF FIELD MUSEUM OF
NATURAL HISTORY, CHICAGO.
Henry Hering, Sculptor.



DISSEMINATION OF KNOWLEDGE—FIGURE IN CENTRAL
HALL OF FIELD MUSEUM OF NATURAL HISTORY, CHICAGO.
Henry Hering, Sculptor.



RESEARCH—FIGURE IN CENTRAL HALL OF FIELD
MUSEUM OF NATURAL HISTORY, CHICAGO.
Henry Hering, Sculptor.



RECORD—FIGURE IN CENTRAL HALL OF FIELD MUSEUM
OF NATURAL HISTORY, CHICAGO.

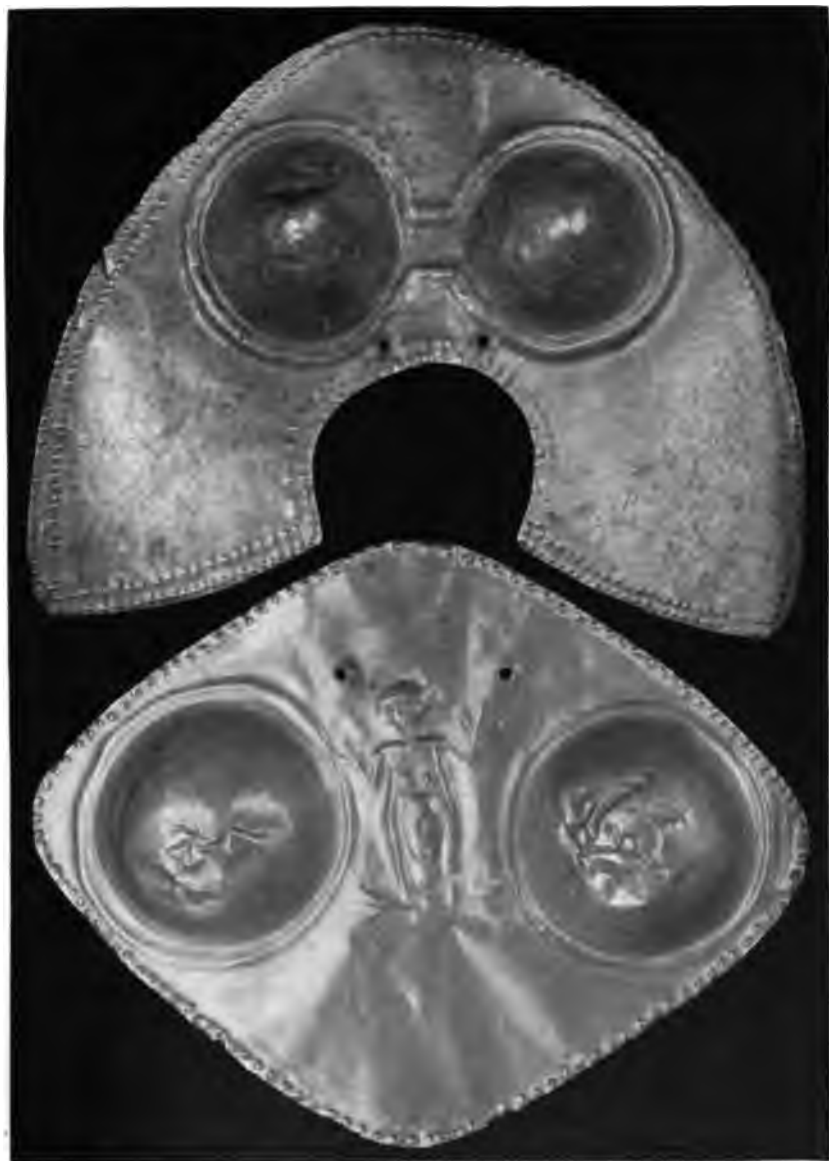
Henry Hering, Sculptor.



STANLEY FIELD HALL, NEW BUILDING.



GOLD EAR-RINGS AND CAST FIGURE OF A BIRD, FROM A MOUND IN COLOMBIA, SOUTH AMERICA.
Gift of Mr. Wm. Wrigley, Jr.



GOLD BREASTPLATES FROM A MOUND IN COLOMBIA, SOUTH AMERICA.
Gift of Mr. Wm. Wrigley, Jr.



SCORPIONS AND WHIP SCORPIONS.

Installed on tablet mounts with a suggestion of the habitat of these poisonous creatures.



TYPE OF CASE LOANED TO PUBLIC SCHOOLS BY THE N. W. HARRIS PUBLIC SCHOOL EXTENSION OF FIELD MUSEUM.



SALISH BLANKET MADE AT SPUZZUM, B. C., ABOUT 1863.
Gift of Mr. Homer E. Sargent.



CLOISONNE ENAMEL STATUE OF PAL-DAN-YE-SHE, A FAMOUS TIBETAN HIERARCH.
Gift of Mr. Stanley Field.



SOLPUGIDS, TARANTULAS AND CENTIPEDES.

Installed on tablet mounts, the upper surface of which suggests the habitat of these much feared arthropods.



SKELETON OF EXTINCT UNGULATE, ALLOPS MARSHI, SOUTH DAKOTA BAD LANDS.
The mount is constructed from the bones of a single individual.



BOTANICAL COLLECTING IN FLORIDA. THE OBJECT ON THE TRUCK IS THE FLOWERING STEM OF A COCOANUT PALM.



DETAIL, STANLEY FIELD HALL, SHOWING STATUARY—SCIENCE AND DISSEMINATION OF KNOWLEDGE.



WEST COLONNADE, SECOND FLOOR OVERLOOKING STANLEY FIELD HALL LOOKING SOUTH.



WEST COLONNADE PARALLELING STANLEY FIELD HALL, FIRST FLOOR LOOKING SOUTH.



AN EXHIBITION HALL, NEW MUSEUM BUILDING.



FREDERICK J. V. SKIFF HALL.

This hall contains ores of the precious and base metals, building stones and marbles and various non-metallic minerals of economic importance.

JUN 16 1921



MOVING OPERATIONS

Loading cars at Jackson Park, Old Building. Platform capacity, ten fifty-foot cars.



AFRICAN ELEPHANTS IN TRANSIT TO NEW BUILDING.
One specimen required removal of the head; the other traveled intact.



MOVING MOUNTED SKELETON OF EXTINCT UNGULATE (ALLOPS MARSHI) INTO NEW BUILDING.

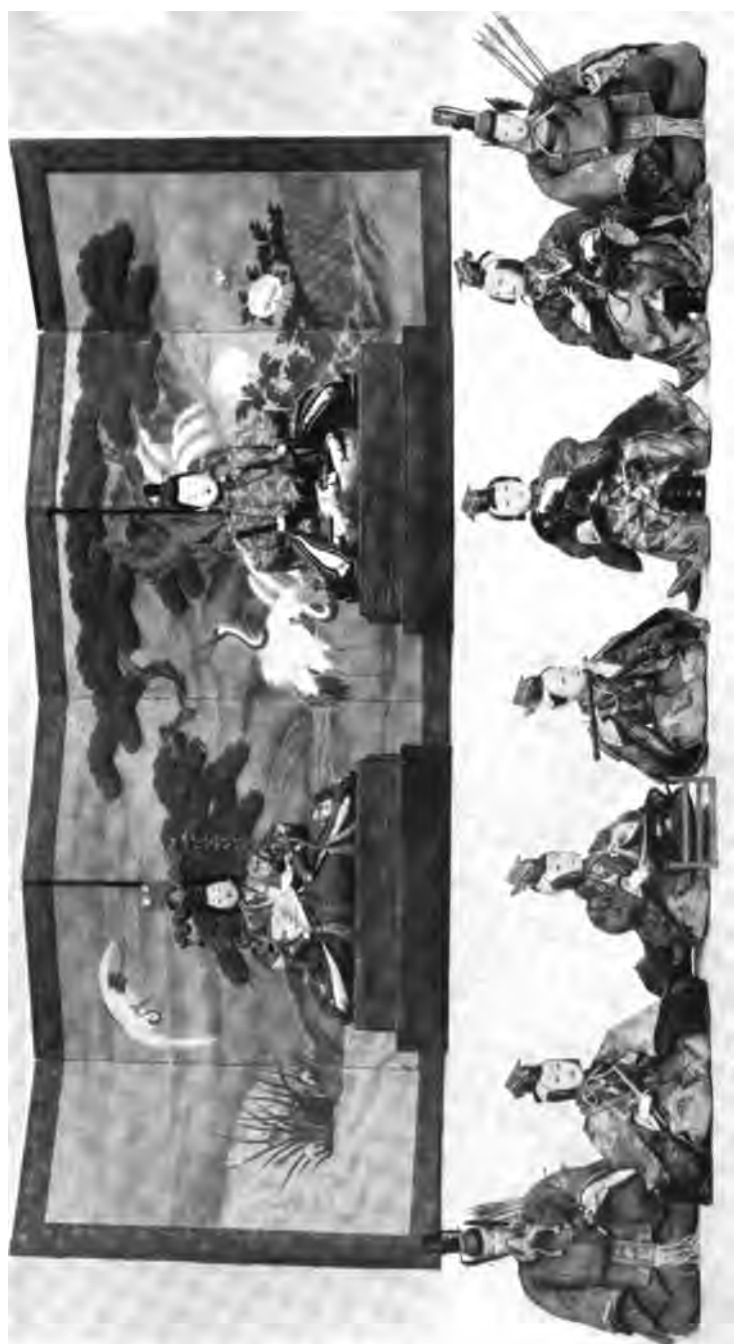


GRAVITY TRAMWAY FROM UPPER GALLERIES TO MAIN FLOOR, OLD BUILDING.
Lower car conveying twelve-foot exhibition case with installation intact.



NATAL PLUM.
(*Carissa grandiflora*.)

A reproduction of a branch of this attractive fruit, introduced into Florida in 1902, for its pleasant cranberry-like fruit and jasmine-scented flowers.



SET OF JAPANESE DOLLS.

Presented by Mr. and Mrs. Edwin F. Gillette. Installed in center of Hall 32 (West Gallery, Second Floor).



RESTORATION OF GIANT EXTINCT BIRD (MOA) FROM NEW ZEALAND.
Height, 13 feet.

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TYPE OF CASE LOANED TO PUBLIC SCHOOLS BY THE N. W. HARRIS PUBLIC SCHOOL EXTENSION OF FIELD MUSEUM OF NATURAL HISTORY.



AMERICAN BISON.

Single bull mounted for new hall of horned and hoofed mammals.

J. Friesser, Taxidermist.



ERECTING DINOSAUR (APATOSAURUS) SKELETON IN NEW BUILDING.

